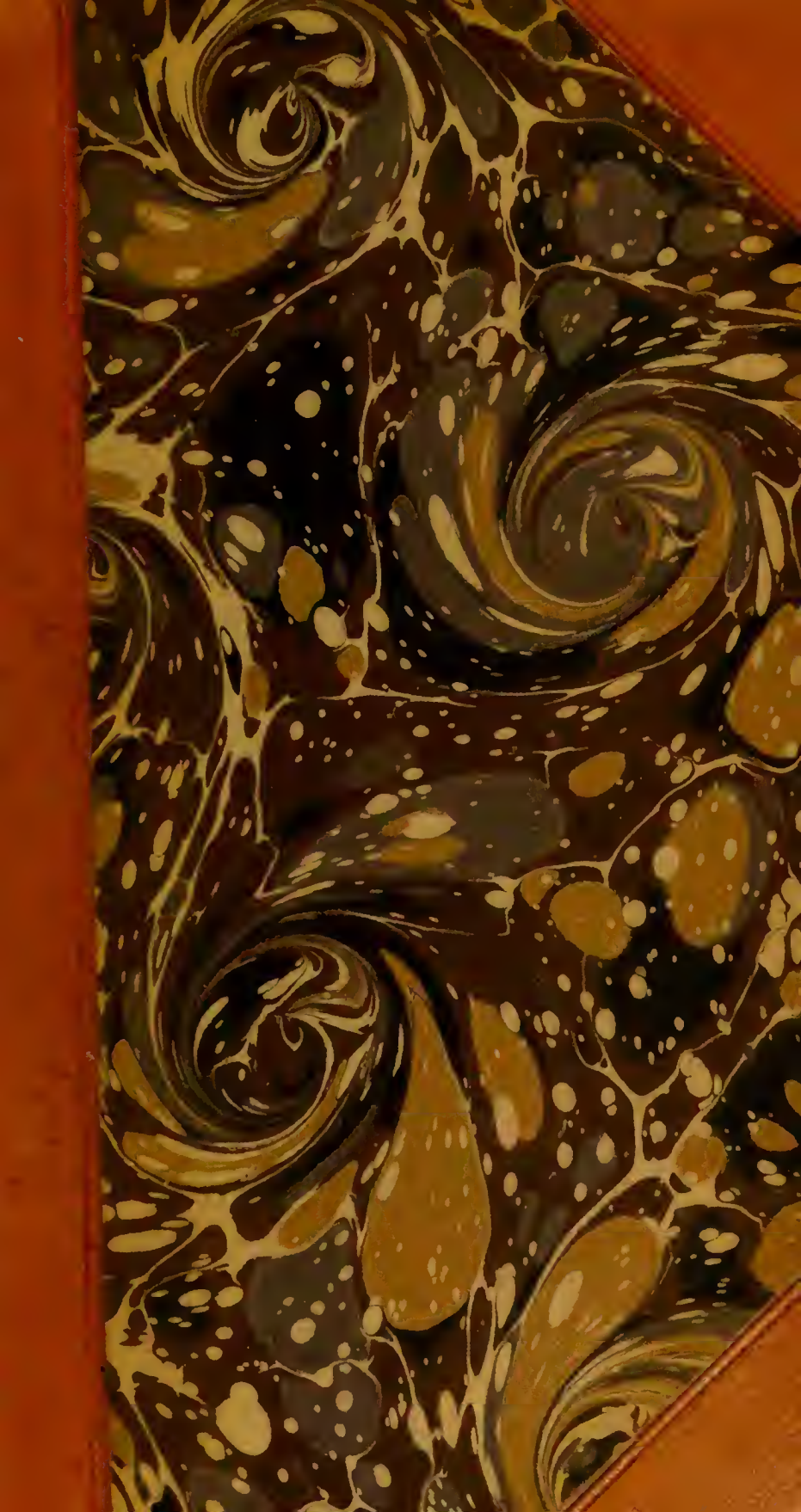
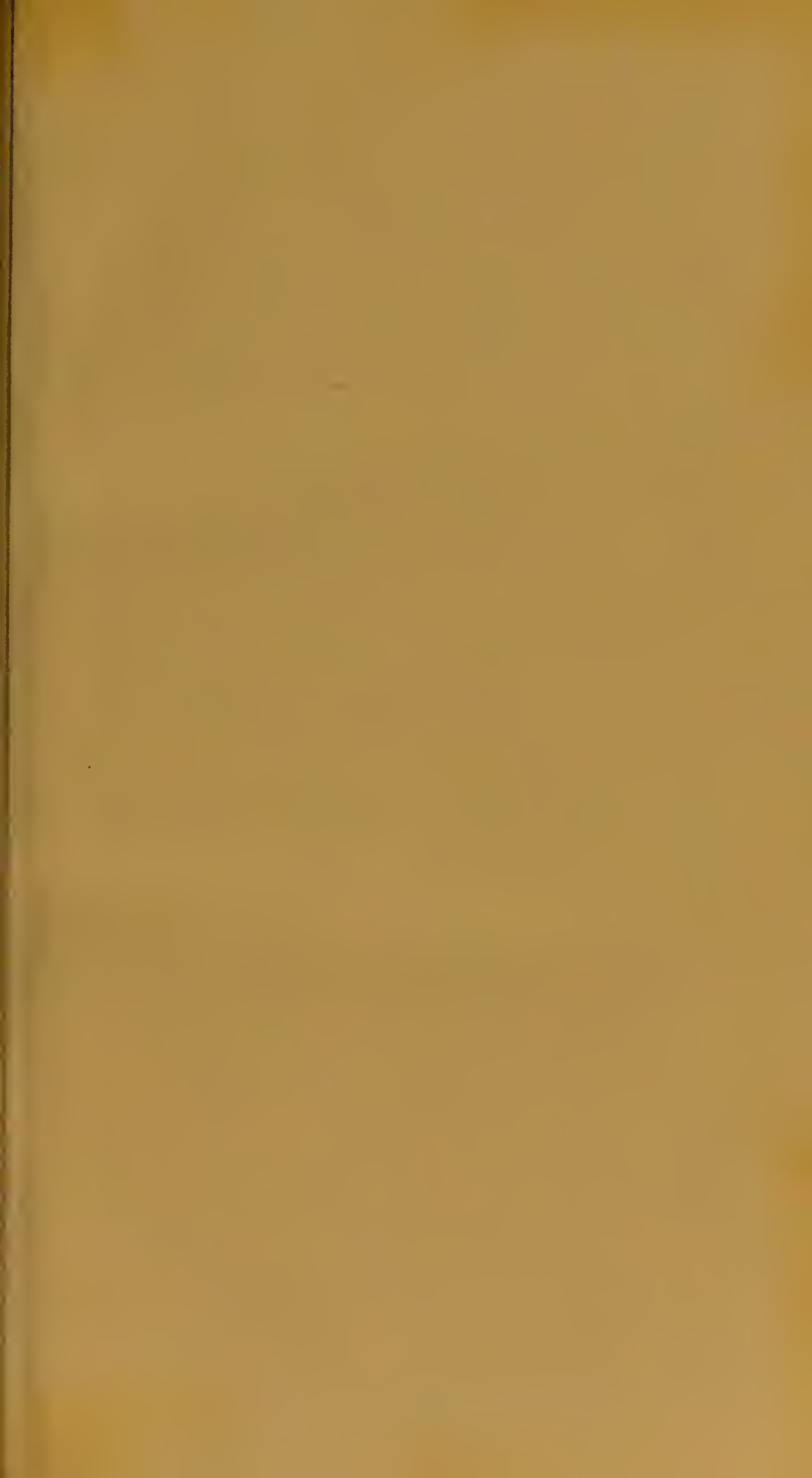




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A
Disquisition
ON THE
STONE and GRAVEL;
WITH
Observations on the Gout,
&c. &c.

J. Compton, Printer, Middle Street,
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DISQUISITION

OF THE

STONE AND GRAVEL;

WITH

Observations on the Gout,

WHEN

COMPLICATED WITH THOSE DISORDERS:

POINTING OUT A

SAFE AND EFFICACIOUS

SOLVENT

FOR REDUCING THE STONE,

AND

Correcting the Calculous Diathesis in the Habit.

BY S. PERRY.

PLUS VIDENT OCULI QUAM OCLUS.

The Tenth Edition.

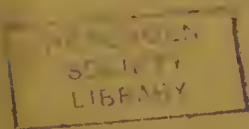
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TO THE

Royal College of Physicians,

LONDON.

GENTLEMEN,

IN obtruding this trifle on the notice of so learned a body, I should be sorry it were thought that I had presumed to invoke the sanction or countenance of its members to what might be deemed, in the strict sense of the word, a *nostrum*; the composition of which it should be understood to be tenaciously concealed by the author. To several individuals of those gentlemen whom I have the honour to address, I have freely communicated on the nature and chief ingredient of the remedy which I am about to treat of, and have forborne to arrogate to myself any other merit than what may have arisen from a sedulous at-

A

tention to the means of safely administering that species of remedy which every Professor of Physic and Chemistry, distinguished for his knowledge in the science, has admitted to contain a solvent-power over the human calculus ; but that it remained a *desideratum* to introduce it with as much innocency as efficacy into the stomach and habit of every person compelled to resort to such remedies, and whose constitution might have become debilitated in proportion to the duration of the disorder. That an alkali is the basis of the Solvent in question, it would be idle in me to attempt to conceal from the knowledge of any one of the Faculty, nor will the humane and liberal part of its professors feel indisposed to do justice to its claim above any thing of the kind at present in use, when they shall have dispassionately considered the happy effects it has produced*.

* To name all the individuals of the College who have proved themselves superior to that prejudice which is said to be contained within its dome, might be thought improper in me, and not approved of by themselves : I cannot,

The discoverer, for he hopes he may be allowed that designation, since the lithontrip-

however, forbear to remark in this place that the late Dr. Huck Saunders recommended the remedy in every case wherein he was consulted, and in which the operation was not determined on; and that Sir Lucas Pepys not long ago, in consultation upon the case of an officer of high rank in the army, which proved completely successful, did the author the honour to assure him that he had recommended it, and should continue to do so. The late Mr. Gunning, an ornament to another branch of the healing art, often declared, that from being an eye-witness of the cure the Solvent had performed on a patient of his upon a third attack, and on whom he had twice performed the operation, he could not but recommend it before that of any other remedy extant. Of the opinion formed on this remedy as a lithontriptic, by that justly distinguished operator, Mr. Astley Cooper, I am not authorised to say; but I shall never be other than glad that, upon a sufferer under the malady appealing to his accurate search, and nice tact, he submits to his skilful direction what course to pursue. Nor is this done with the less satisfaction, from the circumstance of a most singular case of a gentleman from whom (in the presence of the author) no fewer than thirty whole and three or four broken stones were cut about three years ago, and on whom the knife has been again employed within this last twelve-

tic power of the chief menstruum would have been useless without his qualification of it in the manner spoken of, is desirous of freeing himself from the imputation of mercenary motives in the manner he has adopted of dispensing his remedy. In deriving the honest benefit from the universally admitted maxim, “that the labourer is worthy of his hire,” he has not sought to enrich himself from the almost general preference given to the fruit of his labours. He has been obliged, it is true, to fix one regulated price to the Solvent, that is half a guinea to each half pint containing twenty-six or twenty-eight doses, being less than five pence each dose; but even that has been reduced, in innumerable parti-

month: for, as this surgeon and gentleman good-naturedly observed, our walks or departments are distinct, and ought not to be regarded as invidiously opposed to each other. The case alluded to is mentioned for its peculiarities in another part of this work, from the remarkable circumstances attending it, and, as I have learned from Mr. C—— himself, has been thought deserving of communication to the pupils attending his surgical lectures.

cular instances, so as to accord with the means of the patient. Further, it is in contemplation to appeal to the judgment of a few medical friends, whether the remedy may not be rendered still more publicly serviceable, through an establishment of which the sketch or outline is given at the end of the work; and, further, if the medicine were to be dispensed at little more than one half of its present price, the sacrifice by the proprietor being left to be made up by the probable chance of an increased demand. Unwilling, however, to engage for a moment unnecessarily the attention of the learned, to whom this opusculè is dedicated, the author is willing at the call of a few of its members, who may have had, or hereafter may have, the opportunity of witnessing the salutary effects of the medicine, to submit it wholly to the ordeal and direction of a Committee of the College, in order to, and in the hope of, a further improvement of its solvent power;—being allowed the proceeds or surplus profit during his life. The author flatters himself that

what he has said on this interesting subject will not be taken amiss by those gentlemen to whom he has not the honour to be known ; with others, no strangers to his motives, he feels persuaded he shall not only stand excused, but perhaps applauded ; under the assurance that no one has a higher sense of the respect due to the profession, and its professors, than,

Gentlemen,

Your obedient

And very humble servant,

S. PERRY.

SOUTHAMPTON STREET,

Bloomsbury Square,

January 1815.

PREFACE.

IN the whole list of diseases to which the human frame is subject, few are more dreadful in their consequences to the patient than the stone; as it frequently attacks the most robust constitution, and in such case the inflammatory symptoms are carried to a higher degree than usual, making the patient suffer, at once, much pain and almost constant imprisonment.

The stone has long been deemed the opprobrium medicorum, and the knife the only resource. It is not to be conjectured what proportion of those who have submitted to the operation have died; for, to the honour and credit of our surgeons, it must be allowed, that lithotomy in no country was ever more skilfully performed than in our own: notwithstanding which, if we consider the number of persons who are excluded from that sad resource or alternative through various causes, such as the seat of the disorder (in the kidneys for instance) being inaccessible to the knife, the great age of the patient, or ill disposition of the habit to the favourable healing of the wound, with several other considerations of a like nature; it is presumed not only the public, but also the faculty, will regard this discovery with a favourable eye; more especially when it shall have been proved that the innocency of the medicine, in those cases not within the reach of any remedy whatever, is not less to be relied on than its efficacy*

See the case of the Duke of Northumberland.

in others within the scope of relief. Besides, it frequently happens that a sufferer has already submitted to the operation, and is attacked a second time; in which case his distress cannot fail to be aggravated by the condition of the part where the operation has been already performed, as well as from the cicatrix of the old wound.

Now, although it is not positively asserted that this remedy will do more than remove the disease when present, yet no one will deny the probability of its preventing a return of it, when he considers that the medicine must unquestionably have corrected the calculous diathesis in the habit, that is, the disposition of the fluids to give out the stony matter in proportion as it separates the parts of the stone already formed.

If we remove a disease, by separating or destroying the principles on which that disease is formed, the cure will undoubtedly promise more permanency than when the effects only, as in the operation, are taken away: sublata causa, tollitur effectus.

Nothing is more difficult to be subdued than opinions formed on common prejudices. There are many persons who deny the possibility of dissolving a stone in the bladder or kidneys, arguing, that whatever menstruum dissolves a body of a texture so hard, must of course destroy those vessels through which it is circulated. It is scarcely necessary to observe how little such persons are acquainted with the anatomy and economy of the human body; they cannot acknowledge that well-known property in many medicines of

acting specifically. There are medicines which strongly affect the last secretion of the body, without being felt in any manner by the stomach, which first receives them: The case of cantharides for instance. If mercury be rubbed into the soles of the feet, its active properties will be first found in the glands of the throat, particularly in the salival. Many other instances of the like nature might be urged in support of this fact.

It is however certain, that a cure for the stone is not to be found among the medicines which operate by a corrosive power only; there must be an affinity between the dissolver and dissolved—a specific and local operation on the urine, or on the stone itself, otherwise we should prescribe aqua fortis, oil of vitriol, volatile spirits, &c., for either of those will destroy the adhesive principle of the stone, and therefore, upon that foundation, might be called lithontriptic.

In attempting to convince persons theoretically of the possibility of dissolving a stone in the human body, it will be necessary they admit the two following more than postulata, as the one assumption cannot be denied, and the other has been proved over and over again: first, that there are principles to form a stone in the urine of every person, but that a particular disposition of the vessels through which that fluid is secreted, is necessary to aid the urine in running into such concretions: secondly, that an extraneous body introduced into the urinary bladder, as will hereafter be shewn*,

* See the case of Mr. Chapman.

may supply the place of that disposition of the vessels to form such concretions. This, then, being admitted, it must be obvious that, if we can deprive the urine of that property of running into concretion, although we should not change the disposition of the vessels themselves, we prevent the accretion of stone. That a stone already formed is not likely to retain its cohesion long where the urine is deprived of its concretory principle, the most incredulous may believe, when he considers that the surface of such stone must be perpetually acted upon, in some degree, by the urine so impregnated with the disuniting principle, and almost always surrounding it. But as proofs are more convincing and satisfactory than the best theories or logical deductions, the author trusts he shall offer such testimonies as, from their number and authenticity, will inspire the sufferer with a happy and wholesome confidence to commence that experiment which has been so successful in thousands of instances.

A
DISQUISITION
OF THE
Stone and Gravel.

CHAP. I.

IN order to render the subject about to be treated on more easy of comprehension to those who are unacquainted with the structure of the human body, it has been thought proper to give a concise anatomical description of the parts which are more immediately affected by calculous disorders, or concerned in their origin and progress. These are, 1. The kidneys. 2. The ureters. 3. The urinary bladder. And 4. The urethra.

§ I.—THE KIDNEYS.

THE KIDNEYS are two glandular bodies lying in the posterior part of the abdomen and the upper part of the psoæ muscles; the right being seated immediately under the great lobe of the liver, consequently lower than the left, which lies under the spleen: both are almost completely covered by the slight curvatures of the inferior false ribs.

They are supplied with blood vessels directly from the trunks of the aorta and vena cava. A kidney is distinguished by three kinds of substances. The first or exterior substance is thick, granulated, and cortical; the middle substance is medullary and radiated; and lastly the third or inner substance, which is only a continuation of the second, terminates in the inside by papillæ. Each papilla lies in a kind of membranous calix or cup, sometimes called infundibulum, which opens into the common cavity called the *pelvis*. The kidneys are throughout interspersed with an infinite number of small pipes or canals, and in the whole shape resemble that species of bean which we call a *kidney bean*.

The use of these organs is to separate the urine from the blood, which, as soon as it is secerned, is carried to the bladder by means of two tubes (next to be described) called ureters.

§ II.—THE URETERS.

After the calices or infundibula have contracted in a conical figure round the apices of the papillæ, each of them forms a small short tube or gullet, which uniting at different distances along the bottom of the sinus of the kidney, become three large tubes which issue out from the sinus, in an oblique direction, from above downwards, and immediately afterwards unite into one trunk. This trunk becomes that very long canal

which is called a ureter, destined to convey the urine from the kidneys to the bladder, or *vesica urinaria*. The three tubes in men, supply the place of the *pelvis* as it is called in brutes, though they might more properly be called the roots or branches of the ureters. The ureters are about the size of a goose quill, and are membranous as well as fistulous. They are not of equal diameter throughout, but are capable of great dilatation; notwithstanding which, obstructions in them are not uncommon, sometimes occasioning inflammation and laceration. The ureters, after leaving the kidneys, descend obliquely behind the spermatic vessels, over the os sacrum; and passing in between the bladder and rectum are inserted into the former near its neck, at a little distance from each other; when, after piercing the external coat of the bladder, they run obliquely for a short space between that coat and the more internal one of that organ before they penetrate or pour out their contents into its cavity. This construction is well designed for preventing a reflux of the urine towards the kidneys, which otherwise in a stranguery, called technically *dysuria*, might extend the pain and danger of the patient.

§ III.—THE BLADDER.

The Bladder is the receptacle of the urine when it has passed from the kidneys through the ureters, whence, after it has been col-

lected in a sufficient quantity, it is evacuated through the body by the excretory duct called the urethra. The bladder is situated in the lower part of the abdomen, immediately behind the symphysis of the ossa pubis, and opposite to the beginning of the last or strait gut, called technically *intestinum rectum*. The bladder is composed of different coats, one of which is evidently muscular, with its fibres running in different directions, and in the human body is of an irregular oblong figure, and capable of great dilatation and contraction. The part superiorly placed has been commonly termed its fundus or bottom : the opposite extremity, lying lowest, is called the cervix or neck, the middle or body being included between them. It is also divided into the anterior, posterior, and two lateral parts ; and is nearly, though not exactly, of the same diameter, except at its fundus, where it is a little contracted. Near to its neck again it dilates considerably, extending back towards the coccyx or last bone of the back. Round the neck of the bladder, the muscular fibres, being closely connected, form what has been called the *sphincter vesicæ* ; but this part is not, as some authors have affirmed, a distinct muscle, nor is its action different from the rest of the muscular coat. The superior part of the bladder is covered with the peritonæum, but the under part of it is not covered with that membrane. The anterior under part of the bladder is connected by cellular substance to

the pubes ; laterally, it is fixed by productions of its external covering to the other bones of the pelvis ; which bones are the os pubis forward, the os sacrum above, and coccygis below ; backward, with the ilia above, and the ischia below, laterally. In males, the bladder posteriorly is firmly connected with the rectum from the entrance of that gut into the pelvis, till within a short distance of its termination in the anus ; when the neck of the bladder and commencement of the urethra separate a little from the gut, which space is filled with fat and cellular substance. The inward membrane of the bladder is well furnished with nerves, and consequently of exquisite feeling, but it is defended from inflammation, and from the too great acrimony of the urine, by the vast number of glands surrounding it, from which continually oozes out a mucus for the purpose of lubricating it. From the too frequent making water, however, we observe this mucus washed away with the urine before it has acquired a due consistency in the bladder ; although, when out of it, it will become glutinous, and sometimes hang in ropes to the chamber-pot.

§ IV.—THE URETHRA.

The urethra comes off nearly at right angles from the anterior part of the neck of the bladder. It is a cylindrical membranous canal, the first portion of which, from the bladder to the bulb, is surrounded by the

prostate gland, which is of a flat pyramidal shape, with its base turned towards the bladder, and its apex pointing to the perinæum; its superior lamellæ being connected with the pubes, and its inferior with the anterior and under part of the rectum. This gland is frequently injured in a gonorrhœa, and thereby lays the foundation for future great perplexity and confusion; it being sometimes difficult to distinguish its disease and symptoms from those of the neck of the bladder itself. The rectum too, by sympathy and contiguity of situation, often participates in its uneasiness; and if this intestine happen to be affected by hemorrhoids, it is sometimes suspected to be the chief seat of the complaint. The urethra continues to be wholly membranous for a short space after it leaves the apex of the prostate gland; and this part of it keeps in close contact with the ossa pubis, till it passes out from below the arch formed by these bones, which it does by making a curve in its progress to the perinæum. A facility in the operation of sounding is acquired by the operator attending to this curvature in the urethra, the not doing which has often created difficulties, and uneasiness in the mere introduction of a bougie up the passage. A good anatomist will, in general, pass a catheter or staff with ease, while one less expert will not only give unnecessary pain, but be apt to fail altogether.

The urethra, after it has passed the bulb or protuberance before mentioned, and which is, technically, called *Corpus Spongiosum*, proceeds along in a more diffused state through the corpora cavernosa to the extremity of the penis; whereby, expanding again, it terminates in the nut or glans penis, which may be considered as crowning the three spongy pillars.

The canal of the urethra is lined by a fine membrane, full of capillary blood vessels, and its surface is perforated by a great number of oblong holes, or small lacunæ of different sizes, the largest lying near the glans. The cavity of the urethra resembles in its natural size that of a small writing pen, but, like the ureters, is capable of considerable enlargement, so much even as to admit a stone of the bulk of an almond to pass through it by degrees and by skilful management.

§ V.—OF THE URINE.

After having described, in as brief a manner as possible, those parts which are particularly concerned in this formidable disease, being in fact the seat of it, we proceed to treat of the urine, which so copiously affords the matter for the formation and growth of stone. This portion of our subject will admit of, and even require, a more particular consideration, as containing at all times, and in all persons, healthy or otherwise, the rudiments or principles of a stone.

In strictness, it is not intended to deny that the other fluids of the body may contain the same rudiments of stone also; but it does not appear from experience, that, without the accession of some other cause, or a more powerful concentration of their particles, stones do form in them; whereas daily observations teach us, that the work of concretion once begun in the urine, is liable to continual augmentation, till the whole internal cavity of the kidney or bladder be filled with it, and the course of the urine thereby interrupted.

In confirmation of this fact, it may not be thought unseasonable or improper to cite the remarkable cases of the late Duke of Northumberland, and of Sir Thomas Adams. In the first of these it was known to all the medical men who had been consulted by his Grace, that the left kidney was entirely filled with stone. Its office appeared to be completely destroyed, and the surrounding region of it had felt cold and benumbed during the last three years of the Duke's life.

The second instance is strikingly illustrated in the case of Sir Thomas Adams, Lord Mayor of London; who was, notwithstanding, so abstemious and temperate in drinking, as that for forty or fifty years, when at public feasts, he never exceeded a pint of wine, always concluding with a glass of Canary. In his ordinary mode of living, he drank constantly every morning a large draught of small beer with sugar.

However, for many years he felt at times a pain in voiding his urine, which he did by drops, and with (what the historian of his case calls) a degree of acrimony. For many hours before he died, he had manifested no desire to make water, and seemed to suffer no pain by the distention of his bladder. A few days previous to his dissolution, he was very much inclined to sleep, no less so than if he had taken medicines for that purpose. He died in 1667, in the eighty-second year of his age. On being opened by Mr. Hollier, an eminent surgeon, no urine was found in his bladder, the cavity of which was wholly filled with a stone of an astonishing size, weighing twenty-five ounces and a half. But what was most remarkable in this stone was, that, where the ureters are inserted in the bladder, the urine had formed itself a semicircular channel or groove, from the middle of which another was made by the trickling of the urine into the urethra.

The relation of this case is as given by Sir William Adams, his son. The stone is to be seen in the laboratory at Cambridge.

The exact delineation of the stone, with the representation of the gutter the urine had formed, is exhibited also in one of the numbers of the General Biographical Dictionary, but which of them cannot now be recollected. Numerous other cases, similar in almost the same degree, might be referred to; yet the above being so unequivocally laid down, and so indubitably ascertained in

every particular, will be thought amply sufficient to corroborate the reasoning which led to it.

But to return to our subject. Numerous chemists, from Boerhaave and Margraff to Scheele, have sedulously employed themselves in the analysis of human urine, and, perhaps, there is no animal matter which has been subjected to more examination than this excrementitious fluid. The discoveries of this last-mentioned able chemist surpassed those of all the rest, and tended more to put an end to the incoherence between medical hypotheses and the more conclusive doctrine founded on chemical labour and experiment. All that physicians had previously said and done with regard to this important subject, had scarcely any relation to its nature, and had only given rise and colour to the many ridiculous and absurd pretensions of empiricism.

The very able French chemists, Fourcroy and Vauquelin, have, as appears from the *Annales de Chimie*, No. 91, carried the examination of the urine of men and animals further than any of their predecessors: the result of their labours on the former was, from time to time, laid before the National Institute at Paris.

In the well drawn up memoir of the united facts and observations of those experimental philosophers, the smell of human urine is first considered as a very distinct and characteristic property of that fluid.

In urine well constituted, and when it issues from the bladder, it has neither the odour of ammonia, nor of the violet, to which, however, it is susceptible; but it is evidently though faintly aromatic, and that smell arises entirely from a matter peculiar to urine, and to which modern French chemists have given the appropriate name URE'E; this it is which makes it to be what it is, and without which it would not be urine.

Barthollet, a French chemist of much celebrity, has also sedulously examined the quality of urine, and has drawn some remarkable inferences from its nature as more or less acid, according to the prevalence or absence of *gouty* affections. Urine, like most other fluids, whether they are distinguished by their hasty fermentations, or otherwise, is perpetually undergoing a change in its appearance and properties. After becoming putrid and offensive, if left to repose in the same vessel, it will, in time, acquire an odour approaching to ambergris, yielding, at the same time, an incredible proportion of phosphorus. The perspirable matter of the body (to which urine is not inaptly compared), if received on linen or cotton which is slept in for a length of time, is known to resemble or follow, in no small degree, the qualities assigned to undisturbed urine.

The orange colour of urine, as well as its odour, is a property exclusively belonging

to it, and which is found in no other animal fluid. Physiologists have ascribed, though mistakenly, its strong taste to the salts contained in it, not having paid sufficient attention to the small quantity of such salts proportioned to the mass of fluid in which these salts are dissolved. But the most extraordinary property of the urine, above all other, is, the singular change it undergoes in its own nature, and that is, of becoming alcalised, and of forming, by a spontaneous alteration in the quality of its saline part, ammonia and carbonic acid. This property, which is developed in a few minutes in an elevated temperature, has occasioned it to be considered as the most alcalescent of all the animal humours. Instead of remaining acid, it then turns vegetable colours green, and even produces an effervescence with acids when poured into it: it also changes its colour, assumes a fetid ammoniacal smell, and deposits precipitates and crystallised salts, which it did not contain before. Some alteration in the urine, no doubt, commences as soon as its separation from the blood in the kidneys has taken place, and implies a disposition to form those calculi, whose different colour and density most unquestionably are owing to the varying proportions of the saline to the other concreting matter contained in the urine.

From duly considering the preceding facts and remarks, we need not wonder that the analyses of urine, pursued by the com-

mon methods, should have yielded such uncertain results, and consequently have afforded so little satisfaction.

The action of fire, which so easily and so speedily alters the nature of bodies, changes in an especial manner both the proportions and properties of the productions of urine. To examine it, therefore, the most accurately, it should be treated at the instant of its having issued from the body, and its component parts sought for and scrutinized into by agents and re-agents, without employing fire. But science, as yet, is not far enough advanced to afford us a sufficient number of re-agents for giving entire satisfaction from researches of this kind.

This excrementitious fluid, which is more or less coloured, acrid, or saline, is found, from analysation, to abound with free phosphoric acid, and to contain, according to the new nomenclature of chemistry, what is called phosphat of soda, ammonia, and lime; but it is still more remarkable for the presence of a peculiar acid not yet found in any other animal humours, and now denominated the *lithic* acid, because it forms the basis of the stones in the kidneys and bladder, the disease being antiently known by the name lithiasis, from the Greek *lithos*, a stone. The rapid progress modern chemistry has made, gives room to hope and expect that further discoveries, highly valuable to medicine and to humanity, may be progressively laid open to the world. Should

we not be taught how to dissolve the calculous concretion so fast as the patient or the humane physician could desire, it may, at least, instruct us to accelerate in some degree that desirable work, and effectually, though gradually, remove that prejudice which many of the faculty have erroneously entertained, viz. that *the stone does not admit of dissolution by medicine.*

The proportion of the principles contained in the urine may vary according to the state of the body ; but, from the multitude of clear and successful experiments (such as will hereafter be made known), we must consider that fluid as always containing the matter necessary for the growth of stone ; which matter only requires a little longer to be retained in the body to allow the concretion to begin, or, after another manner but to the same end, the introduction of an extraneous substance into the bladder, which immediately becomes a *nidus*, or nucleus, for successive lithic strata to form around it. This interesting part of our subject will be exemplified in the clearest manner by the case of Mr. Chapman, one of the chief clerks at an eminent banker's. This aptitude in the concreting matter of the urine to seize upon any extraneous body in order to form a stone, has been known and treated on by many antient as well as modern practitioners.

Boerhaave was desirous of obtaining all possible light upon the subject, which he

considered of vital importance to the success of the medical art. This great man was not uninformed of the tendency of the urine of brutes to run into similar concretions, or *petrifications*, as they were called; from the results of introducing pieces of vegetable, and even metallic, substances, into the bladders of dogs, rabbits, &c., which never failed in their uniformity of effect, where the animals recovered of the wound. The growth and density, or specific gravity of the concretions, might and did, indeed, appear different and various, but concretions were unfailingly produced by the experiment. The sagacious Professor made an experiment with the urine of an healthy man, with whose family he was well acquainted. There had never been the least suspicion of an hereditary calculous disorder, neither in this person himself had there, at any time, been observed the least sign of a disposition to stone.

He received into a clean cylindrical vial, about the diameter of one's middle finger, the urine of this person in perfect health, made about twelve hours subsequent to his last meal, and after a good night's rest. While the urine, which was of a yellow cast, was yet warm, and perfectly pellucid and homogeneous, he examined it with a microscope, but could not discover in the bottom of the glass (which was extremely white and clear), nor in any other part, the least heterogeneous substance. The urine was left in the open air, rather warm (Fahr-

enheit's thermometer being at 72 degrees), the mouth of the cylindrical vessel only being covered with paper to keep out the dust. In about seven minutes and a half, the urine was again inspected with the microscope; it now appeared full of corpuscles, which did not seem to have a smooth and equal surface, but resembled little flocks of wool. They were shaken pretty rapidly up and down, so that, as some descended others ascended. From this experiment the parts seemed of equal gravity, none outweighed the rest, for the little flocks which descended, ascended again, and *vice versa*.

Soon after, something whitish began to appear in the urine; at the same time, also, were observed streaks apparently pinguious, resembling those which are visible when spirits of wine are gradually poured into water (for, at that time, before the spirit is thoroughly mixed with the water, such little fat-like substances do appear). While this new phenomenon was under examination by the microscope, with the utmost accuracy, a cloud appeared to be formed by degrees out of those pinguious striæ, which, at first, hung pendulous through the whole cylinder, but gradually receded more and more from the sides, and, at length, was collected towards the axis.

These little flocks which before moved through the urine, began now to disappear, and collect into clouds, which becoming thicker every moment, descended, and at

length subsided in the cylindrical vessel, six inches in height, to the distance of half an inch from the bottom of the vessel : there was an inch distance between the upper part of the cloud and the utmost surface of the urine. But this whole cloud, viewed with the microscope, contained extremely minute shining concreted little crumbs, in its whole compass and also in its interior substance. These shining little particles began to adhere to the bottom and sides of the glass, and the little crumbs, at first white, in about half an hour's time grew reddish, then became of a deeper colour, and, in about the space of two hours, were of the same colour as the sand of urine, which is deposited at the bottom and sides of a chamber-pot, wherein urine has been suffered to remain some time. These rudiments of a forming stone, however, continued so entangled with the cloud, that they would not fall to the bottom of the vessel, but appeared under the form of a brownish cloud.

By degrees, some of these little crumbs were so increased in bulk, that they subsided to the bottom : at the same time, and in the uppermost surface of the urine, which was contiguous to the air, something like molecularæ concreted, which, upon lightly shaking, soon fell to the bottom. In like manner, also, these molecules increased in size, all round the sides of the vessel, so that at the expiration of twenty-four hours they were equal, in size, to grains of mustard seed !

They were of the figure of a rhombus, whose opposite angles are obtuse and equal: other parallelopiped molecules ran between them, redder and larger than the former.

Some square grains were also seen between them, but very few. It was never observed, in these experiments, that molecules con-creted in the urinary cloud as large as those formed on the sides and bottom of the cylinder that contained the urine.

It appeared, also, that these rhomboidal molecules here and there affixed themselves to each other by the sides, so as to become of a larger size, from six such corpuscles being mutually attached to each other.

From this experiment the Professor concluded the stone to be produced by granulation or crystallization, not from different elements in the body, or from a confused mixture of concreting humours, as others maintained, but by the approximation and application of like elements.

Dr. Clerk having observed certain filaments often flowing in the urine, which, though less transparent than the urine, were, nevertheless, when taken out, found to be pellucid as crystal, thought them to be the cause of the gout and stone; because, when dried, they became a whitish calx. He supposed it to be the *vitreous pituita* of the ancients. Galen describes himself to have been relieved by the voiding abundance of a vitreous pituita from a violent pain, the cause of which he had attributed to a stone de-

scending from the kidney through the ureter. The great Sydenham, who was afflicted with the stone, made a similar remark on himself.

The rudiments, then, or primitive particles of stone, exist in the urine of the soundest persons; nevertheless, they may do no injury to the health of such persons, provided they are evacuated with the urine before they have separated therefrom, and begun to coalesce. But as it is found that these stony particles separate sooner in some persons and slower in others, it is evident that the former must be much more liable to the disorder we are treating of than the latter. This separation does actually take place in the urine of many persons as soon as it has been secreted in the kidneys, in others immediately after it has passed the ureters into the bladder; but if it happens to be evacuated thence as soon as formed, such person may escape uneasiness from the disorder many years, the sand, whether nephritic or vesical, being seen to subside to the bottom of the chamber-pot, while the urine is still warm.

As this sand, or, as it may be called, *native-stone*, therefore, is to be found in the urine of every person, and no one can be absolutely and entirely exempt from the hazard of its concreting (especially if deprived at any time of due exercise); how much then does it not behove the professors of medicine to direct a portion of their attention, in particular, to the quality and pro-

perty of a fluid which admits so formidable a concretion to take place within it, furnishing materials for its unlimited growth, and which, according to a long and almost irradicable prejudice of opinion, has, whether large or small, been said to allow of no cure but by incision and extirpation!

To the well known fact of the existence of calculous matter in every urine, the indefatigable French experimentalists were desirous of obtaining satisfactory answers to the following important questions; viz. “Why are these calculous matters sometimes so abundant? Why does the calculous disposition exist in the habit of some subjects and not in all, though the urine of all contains what may and does form them? Why are they formed sometimes speedily and sometimes slowly? What is the cause of the sixfold variety of the calculous matters, their mixture and interruption?” Now, though their attentive researches did not obtain a solution to all these questions, yet have they satisfactorily answered some, and thrown a considerable light on other points which before lay in obscurity.

They have proved that several matters, hitherto unknown in urine, exist in it; as 1st, Phosphat of magnesia; 2d, Urat of ammonia, which is formed at the time of the decomposition of the urine; 3d, Albumen and gelatinous matter; 4th, The oxalic acid, which is supposed to be produced under some morbid circumstances; and lastly,

Siliceous earth, but which is found in it only very rarely.

The special matter called *Urée*, which gives to it its odour, colour, and savour, forms the $\frac{1}{20}$ of its substantial matter. The analysis of putrid urine, however, differs very much from that of fresh urine, the former containing nine new matters, which could not be said to exist in it while fresh and in its natural state; viz. 1st, Ammonia in excess; 2d, The phosphoric acid saturated by this alkali; 3d, The phosphat of magnesia converted into ammoniaco-magnesian phosphat; 4th, The urat of ammonia; 5th, The acetous acid united to ammonia; 6th, The benzoic acid saturated with the ammonia; 7th, The muriat of soda become octaedral; 8th, The muriat of ammonia become cubic; 9th, The carbonat of ammonia. To these may be added the precipitation of the albumen and gelatinous matter effected by the ammonia, and which accompanies that of the phosphats; so that these salts, like the matter of bone, are susceptible of giving carbon when heated.

We know, also, for certain, that a very moderate heat formed ammonia in urine which speedily neutralised its acidity; that its colour embrowned by evaporation, and its abundant crystallisation on cooling, after it had been brought to the consistence of syrup, depended on the concentration of the particular matter, the common source of its colour, odour, savour, and its other charac-

teristic properties; that the fetid garlick smell, and the crystalline form, were two of its most prominent characters; and in the last place, that as all urine, evaporated in this manner, forms itself into a mass, there must necessarily be found in this mass the constituent matters of urine, except the portion of ammonia formed and volatilised by the evaporating heat. This lamellated crystalline mass, treated with alcohol, was almost entirely dissolved, and nothing remained but a little of the grey saline substance, which the water separated from the phosphate of soda and ammonia, and a little phosphat of lime and uric acid, insoluble in the liquid, but which was insulated from the calcareous phosphat by the ley of caustic alkali. These salts, and this acid, made some *milliemes* only of the weight of the urine; while the matter dissolved by the alcohol formed some *centiemes*. The latter was composed of a little muriat of ammonia, benzoic acid, and urinary matter, more abundant than all the rest.

Such is the series or result of the analytical processes of two intelligent chemists, which are exactly analogous to those employed on the residues of mineral waters, and by the help of which they have been able to separate the constituent matters of human urine more exactly than had been done before.

The urine, too, is affected in condition and smell by various medicines received into the

stomach; and indeed the subtile effluvium of many substances, inhaled with the air, will produce similar effects on the urine.

The application of a blister to the surface of the body will induce strangury, and intolerable heat at the neck of the bladder, from the absorption of the salt contained in the cantharides, with which the plaister is composed.

Paint will, in a milder degree, produce the like, and impart to the urine, when first made, the fragrance of violets: but the eating of asparagus will communicate to it a fetid odour, resembling the urine made by a person with an ulcerated bladder. Yet neither the stomach, nor the blood and its circulation, seem sensible of that powerful agency we are speaking of.

This peculiar property in the urine was among the first suggestions and motives for the author's inquiries and researches after a remedy for the stone, upon the principle of a *specific* operation. Whatever preference, therefore, is due to his Solvent, over that of any lithontriptic which may have preceded it, is unquestionably derived from his success in directing the chief ingredient of its composition to the seat of the disease itself; without such ingredient producing that effect on the stomach and viscera it is wont to do, if left to its uncontrolled operation.

Upon maturely and thoroughly considering, then, all the phenomena that are observed or made known to us, in or concerning the

urine of persons in no respect disordered (of many of which we have already spoken), it seems clear and incontrovertible that the original, that is the pristine cause of the stone always and naturally exists in the fluids of the most healthy. The *inflammability* which a fermentation of substances heaped together, sometimes produces, resides in those substances, though it may never be called up or put into action but by the application of a spark of fire: so *lapidification*, if we may be allowed thus to term it, which may never take place in the urine of numbers of persons, would inevitably commence on the immersion of a foreign body into it. It would be like the spark of fire to the combustible or fermentative matter.

CHAP. II.

§ I.—THE ANALYSIS OF THE STONE.

AFTER what has been said on the nature and property of the urine, it is unnecessary to say much on the component parts of the calculus. The analyses of former chemists, when they described it to be made up of an *earth*, of a *salt*, and a great deal of *fixed air*, with a small portion of *oil*, were not mistaken; it is only that later chemists have more minutely examined the parts which make up its bulk, and have subdivided them. It is enough then, on that

head, to say, that Fourcroy, Vauquelin, and Le Grange, as well as numerous other able experimentalists, have resolved the calculus into those principles which Hales had before assigned to it. The oil, he observed, was in less quantity, compared to the whole substance, than was proportionably contained in the blood and solid parts of animals. The famous Lister, however, in the presence of the Royal Society, extracted from the earthy portion of a human calculus, some iron, by means of a loadstone! Scheele and Bergman bestowed much attention upon the variety of colour and density of stones. The difference of the latter was not found to be much. The specific gravity of urinary and *biliary* concretions differs very much; some of the latter being light enough to swim on water at first applying them to its surface, though they soon sink to the bottom. For the most part, the specific weight of the calculus to water is found to be as five to four: Yet Antonius Vander-Linden had a denser stone in his possession, which he affirmed to have taken himself out of a dead man's body, which weighed thirty-two ounces; and which, for its extraordinary size, figure, and quality, he shewed to numbers of the faculty. It was hard, compact, nearly triangular, and of the colour of flint; and, as he declared, would strike fire with a steel. With respect to the triangular figure of this huge calculus, there can be no doubt but that if it had been

sawed in two, so as that the nucleus could have been exposed, it would have been found triangular itself, it being ascertained that the surrounding concretion always takes the shape of the nucleus. Even if the nucleus present only a small protuberance in any one part, the concretion on the same side will demonstrate a prominence corresponding with it. It is from this undeviating circumstance that many professors, who have paid much attention to it, have been led to declare that they believed all stones in the bladder are first formed in the kidneys. The reasoning that has already been made use of, together with the cases that will be presented hereafter, leave not the smallest doubt of the disposition of the urine to give out matter for a growing calculus whenever it meets with a nucleus of any kind. The same may be said of the urine of brutes, as the following striking instance evinces.

The celebrated Nuck (*Adenographia*, page 78, et seq.) has demonstrated this by what he calls a happy experiment. Having opened the abdomen of a live dog, he drew the bladder out of the wound, and made an incision in the bottom thereof with a sharp knife; through this wound he introduced into the cavity of the bladder a little round wooden button; and as soon as the fibres of the bladder were in a state of contraction, he replaced the bladder in the body in its natural situation, and sewed up the wound of the abdomen. The animal, for the first

two days, seemed dull and sick, but, in a little time, its appetite and natural alacrity returned, and the only complaint that was observed to remain was a more frequent inclination to make water than usual. At the expiration of some weeks he dissected the dog, in his private theatre, in the presence of his pupils, and "the wooden button being extracted from the bladder, appeared covered over with a calculous shell, in a manner not unlike that in which we see sugar-candy adhere to its sticks."

From this he concludes that, in like manner, a stone first formed in the kidneys, and then carried into the bladder, constitutes the nucleus to which afterwards the calculous substance grows.

If the smoothest quill be dipped into healthy urine, fresh made, it soon acquires a crust of very soft sand, which closely adheres to it; when more fresh urine is again poured on it, the crust is further augmented; nor can it be said, that there would be an end to its increase while fresh supplies of urine were presented to the incrustation. Boerhaave termed this concreting substance *native-stone*: and which, according to his opinion, required but a diminished motion, or a little longer time remaining in the body, to coalesce, at all times, into gravel.

It is greatly to be lamented, that the art or science of medicine and of physiology does not, like many others, admit of mathematical reasoning and proof. It is liable to er-

roncous calculations and conclusions ; and to add to the regret of the searcher after its important truths, he is often made to witness the most obstinate disputations and violent contradictions. On the subject even of the first of the non-naturals, the systole and diastole of the *heart*, how must his own heart be wrung with chagrin and disappointment when, after reading *Borelli's* treatise on the subject, wherein that author concludes, that the heart, at every contraction, exerts a force equal to 100,000 pound weight, a plausible adversary starts up with arguments offered to prove that this force does not amount to many ounces !!

The two main points which contribute any novelty or presumed merit in this trifling production, are, 1st, The revival and adoption of the theory of an *exuviae* from the bones floating in the circulation, and furnishing a part of the matter or composition of the human calculus. 2dly, The exposition of what has been hitherto enveloped in much obscurity, viz. the *nucleus*, or kernel as it were, round which the calculus grows. In addition to what the author has already said on the first of these points, he refers the reader to the experiments and observations on shell and bone, by Charles Hatchett, Esq., F.R.S., in No. XXI of the *Philosophical Magazine*, page 29, for February 1800, and in No. XXIV, page 355; for proofs that such *exuviae* do actually make part of human calculi.

Mons. Merat-Guillot, apothecary at Auxerre, announced in the *Annales de Chimie*, No. 100, that in analysing dry human bones which had been in the earth, he found the following proportions of matter in 100 parts, viz. of phosphat of lime, 67; gelatinous matter, 16; carbonat of lime, 1.15; loss in the operation, 15.5. He thought the loss might, in a great measure, be ascribed to the water which was thrown off principally from the gelatinous matter, since it was dried very much before weighing.

There is hope, however, that enough has been now said on this subject to induce our sagacious operators in chemistry and natural philosophy to leave no part of it much longer in doubt.

With respect to the long-deemed mysterious nucleus, it may be observed, that several eminent writers have insisted upon it, that all stones in the bladder are first formed in the kidneys, that is, their nuclei having descended through the ureters into the bladder, and not being immediately evacuated, have there grown into stones. It cannot be denied, that many *vesical* stones have, when cut in two, discovered this *renal* stone, or nucleus, in their centre, to which the rest of the calculous substance had grown in laminae. Now, on the other hand, stones taken out of the kidneys, after death (for there is no other way of getting at them whenever they have been too large to pass the ureters), and sawed in two, demonstrate

no such appearance: but, upon a nice examination, generally exhibit a small chasm, as if a drop of blood, or a globular portion of mucus or mucilage, had made the nidus or bed for a future accretion. This is the most satisfactory, and, indeed, the only rational way of accounting for the numerous calculi sometimes found in the bladders of nephritic patients, after death or the operation. No fewer than from forty to fifty have been taken out of the bladders of men and women, who have sometimes been able to give an exact account of the periods at which most of them had passed thither from the kidneys.

It is, moreover, contrary to what we know to be the nature of the calculous concretions, that so many of them should ever be formed in the bladder, if they were not possessed of separate nuclei; not but that a piece of calculus, separated from a larger stone, may become the nucleus of a new concretion; but, in such a case, it invariably takes an irregular shape, and, upon being cut open, contains nothing like that pea or kidney-bean-shaped nucleus or core which is so observable in the before described concretions.

We may therefore conclude that nearly the same process takes place in brutes. In the "Works of the *Academie des Sciences*," for 1700, page 52, we learn, that Lemery exhibited to that learned body a stone, extracted from the bladder of a mare, resemb-

ling, in size, a middling melon, but its specific weight was not so great as might be expected from its size. It weighed twenty-three ounces and seven drachms.

Concerning the original nuclei in the kidneys we cannot so satisfactorily speak. They may be various in their natures, though uniform in their effects. That every grain of sand which we see some people pass with their urine, without feeling either pain or inconvenience during months, nay, sometimes years, has a nucleus within itself, is more than probable. The naked eye can often discern a particle of red blood in the centre of such little spheres, and, sometimes, a white gummy matter, which can be nothing else than a mucous fibre, or animal thread, rolled up as it were into a little ball. With a microscope every one of those may, if skillfully cut in two, be discovered to contain a nucleus of one or other of the kinds spoken of. These observations, founded on our unerring senses, further prove the inutility of the distinction between *gravel* and *stone*, the former being nothing but the latter in a milder degree; nor can it be too often repeated, that the same means which are adopted and pursued to destroy the concretion of stone, must be equally efficacious in preventing the formation of gravel. It is one undeviating effect of the Solvent (about to be treated of), after being taken into the habit for a moderate period (a few months for instance), that although the patient under the stone in the

bladder, should have been accustomed to evacuate much sand with his urine, and which may be considered the superabundance not required or taken up by the accretion of stone; this portion of sand is, within the space of time above mentioned, gradually diminished, till it ceases altogether by the medicine having prevented the urine from giving it out; in other words, having completely removed the calculous diathesis of the habit. The only difference, however, which may be observed between the different disorders, or more properly between the stages or degrees of the disorder, is, that while under the denomination of gravel, *i. e.* that the concretion is not too large to pass the excretory urinary ducts, powerful diuretics may be safely taken, so as sometimes to remove the complaints of the patients speedily, and for that time effectually. The same disposition in the habit may, however, allow the sand or gravel to form anew, which fact and accompanying consideration constitute the satisfaction obtained by that solid cure arising from the *correction of the state of the fluids disposed to form the sabulous matter in the first instance.* To conclude this part of the work, it cannot be too clearly enforced, that in the stone, or where the concretion is too large to be evacuated whole, diuretics and other forcing medicines must be more than useless, as they may be attended with serious consequences.

§ II.—OF THE NATURE AND CAUSE OF THE GRAVEL AND, STONE.

When we consider the nature of the fluids of the human frame, and that those fluids may be easily accelerated or retarded in their circulation by various causes and accidents, it is not to be wondered at, that they should be disposed to give out or deposit in the body any heterogeneous part contained therein, which they never fail to do when out of the body.

Heat being generated and maintained by motion, it is natural to conclude that when that motion is impeded, the whole mass of fluids will become less warm, and the urine be more likely to allow its earthy part to subside, and its particles to be attracted by one another, or by any thing to which they have an affinity.

The whole universe is held together by the power of *attraction*: if, therefore, we had not the familiar experiments before our eyes of the attraction of the globules of water, and still more strikingly of those of quicksilver, to run into each other, it would be no unreasonable thing to conclude that the same principle pervades every portion of the component part of the stupendous, the boundless structure!

This is, undoubtedly, a most important subject of inquiry to the sufferers under this malady, and the author does not scruple to

say that, since he first contemplated it, now many years ago, he has considerably altered, and he hopes amended, the theory he then offered thereon. He could not content himself with the *rationale* or conclusions deduced from the opinions and experiments of either antient or modern writers on the disorder. He could not satisfactorily account for so many children, almost while at the breast, being seized with this tormenting disorder; something, therefore, more than the mere diminished circulation of the fluids, seemed necessary to lay the foundation of the malady in those young subjects, whose pulse is always so much quicker than in grown persons. The urine, therefore, must be especially charged with the matter for concretion, and the vessels through which it circulates must possess an aptitude, either by the diminutive pores of their strainers, or some other such cause, to bring the floating particles within the sphere of each other's attraction.

Having spent more than twenty years exclusively on the morbid economy of the human frame, as far as relates to this interesting subject, it may be easily imagined that, in order to derive all possible satisfaction from his labours, the author has not only consulted the opinions of antient writers upon the stone, but has accurately observed the result of his own and of others' experiments. He is free to confess, that he owes something to the former as well as to the latter.

They have together, however, clearly convinced him, that the opinions of Boerhaave and of Van Swieten, as to the *origin* of this disorder, though confusedly given, and which have been not only overlooked but unspoken of, were not altogether so chimerical, but deserve respect and consideration. One of the above authors affirmed that the stone might originate from a calcareous or osseous matter floating in the blood, it being incessantly supplied by the attrition of the *fluids* upon the *solids*; in other words, an action upon the BONES themselves. There is not a single experiment made, through the long period devoted to this research, which, in the smallest degree, militates against this, if not *new*, at least newly revived doctrine. I have often reflected on the circumstance that the stones cut out of children are frequently found *specifically lighter* than those extracted from adults; whereas were they simply *petrescent*, they might be expected to possess equal gravity, at least; since the smaller the primitive particles of all stones are, the more compact or dense is the mass which they compose,—as witness the marble on the one hand, and the coarse free-stone on the other. Now, as we know that the bones of infants are more soft and porous than those of persons in riper years, it is easy to understand that whatever is worn off them by attrition, or cast off them in the way of *exuvia*, will be proportionably light. The raspings of deal, or even of oak, differ widely in specific weight from

those of box and ebony. The matter we are descanting on, as one of the chief constituents of stone, may be compared to a species of fine *ivory dust*; and the tooth of the elephant differs in compactness, or, in other words, in specific gravity, according to its age. If it be then demanded how to account why stones have been found so hard as to give out sparks in collision with steel; it may be answered, that all bones contain a portion of *silicious* matter; and that by the peculiar habit or structure of the secretory organs of some persons, much of that flinty substance has abounded in the calcareous, or, as it may be termed under this new view of it, *osseous* matter, presented for the stone's accumulation.

Let it be understood, however, that the writer of this, upon numerous trials, has never been able to draw a spark from any calculus which has fallen into his hands; he has only repeated that which has been affirmed by respectable authors; and on this, as on other subjects, calculated to excite admiration or wonder, he has often heard from the mouth or pen of persons of reputed credibility what he could not absolutely deny, and yet found it difficult to believe. In the sawing a stone in pieces, it is nearly the same operation to the instrument and to the feeling of the hand as dividing a bone. If a calculus be thrown into the fire, its fusion and odour differ but little from those emitted from a dry bone; more

especially if the calculus has been kept long enough to part with its urinous impregnation, as the bone must also have been kept to lose its oily and other inflammable substance.

But a stronger and almost conclusive reason of itself, for preferring this to every other doctrine or principle laid down of the origin and accumulation of the stone, is, that it at once accounts for the disorder attacking the youngest infants. It will account also for the abstemious as well as the intemperate being equally martyrs to its power; and that in countries where wine is the common beverage, in others where cider alone is drunk, and again, in those places where malt liquor, as ale or beer, is abundantly and almost universally used, the inhabitants are indiscriminately liable to be afflicted with calculous disorders; so that the closest observers, and nicest calculators, have not been able to say what classes of the above persons are most in danger of it, or in what country it most prevails. In the north of Scotland, in the Hebrides, it is heard of—it is found in the East and West Indies. Under the very equator its influence is felt. That intemperance will lend its aid to create the evil, and that a too sedentary life will accelerate its increase, must be unhesitatingly admitted. Some of the experiments herein contained may be conceived, however, to carry more persuasion, if not conviction, to the minds of sceptics to this seemingly new theory (if such there

are), than any thing which has yet been said. It will remain, nevertheless, for our able chemists, further to apply the fire and their retorts in analysation of this congregated animal substance, so inimical to the health and repose of their fellow creatures; and to make known, from time to time, the result of their labours, under the hope that any further lights thrown upon what most certainly has never before appeared clear, may conduce, at length, to free, or at least considerably relieve, human nature from one of its greatest calamities. The author, being of an age above the vanities of the profession, or of the world, will gladly lend his aid, and communicate his own experience, to any other person, in furtherance of that object which every humane mind must wish to see fully accomplished. It is an object, in the attainment of which he has employed much of his time, and is resolved still to employ the last years of his life. He, therefore, again takes this opportunity to say, that, to many medical gentlemen, he has made no secret of the curative means he uses in this disease; as will be affirmed by some of our most skilful provincial surgeons. Mr. Attenborrow, for instance, first surgeon of Nottingham Hospital, in conjunction with the humble author of these sheets, was called in to a patient in that neighbourhood, to advise upon the expediency of resorting to the bistoury, or proceeding in the use of the Sol-

vent herein recommended. After a candid exposition of the properties of the medicine, and of the effects it had produced, both the patient and that eminent gentleman were persuaded to lay aside all thoughts of the operation. It may, in this place, be desirable to know whether the patient is well, or whether the operation has only been deferred; —to which it is answered, that he is not yet well, but that the operation is further from his thoughts than ever; that, although he was sounded three years ago, and the stone instantly ascertained, yet so far is it from having increased in bulk, that within a week of the writing this account, he has travelled to London, in a gig, with the greatest ease; and he told the author that he had travelled, during the last month, many hundred miles, in shaking carriages over rough roads, with little or no inconvenience; insomuch that there is, from these facts, a well-grounded reason to believe that the calculus may, in a few months, be reduced to its original nucleus, and evacuated by the urine.

Although the mention here of the qualities of the remedy in question is, in a measure, premature, and only incidentally introduced by a relative topic, yet now as it has led to, or is connected with, the case of Mr. Hawksley, it may be advisable to repeat the observation already made as applying generally to the dissolving quality of the favoured remedy; and that is, when a person, labouring under a confirmed stone, acknow-

ledgedly in a state of accretion, and nevertheless passes with his urine a great quantity of red or other coloured sand ; should such person, so circumstanced, be disposed, or recommended, to take this medicine, the first effect is the gradual diminution of that sandy discharge till it altogether ceases entirely. Now, though it cannot be said that all who have taken the remedy have been cured, yet it may be solemnly affirmed, that in no single instance did it ever fail to stop, in a few months at most, the formation of those particles or granulations of sand, which, out of all question, furnished accessory matter to the stone ; the superabundance of which, that is, what the stone could not take up, having been discharged with the urine in the manner described. The quantity evacuated by Mr. H., and collected from his urinal in the former or early stage of his complaint, was prodigious, often a tea-spoonful at once !

What then must be the state or condition of persons so situated, who do not betake themselves to a remedy of this nature ? How rapid must be the growth of the calculus ? With what desperation will not the sufferers be driven to the hazard of the knife !! The invariable and auspicious operation of the medicine has, however, often been, and will, perhaps, again be, misconstrued, without communication with the author. The pain is felt as usual, perhaps with aggravation, from the continuance of the friction of the stone against the tender

coat of the bladder; the hitherto accustomed discharge of the sand with the urine, has, by degrees, disappeared; the mind of the sufferer, prone to, and, perhaps, fruitful in apprehension, has been induced to consider the cessation of such discharge as an unfavourable omen, concluding that it has been absorbed or rather taken up by the calculus. Whereas, had that been the case with the gentleman whose name has just been mentioned, so far from being able to travel five or six hundred miles in little more than three weeks, it may be rationally presumed that, by the natural and expected growth of the stone, the knife must have been long ago submitted to. Nature is not capricious but uniform in her operations; it is therefore as impossible that the medicine which dissolves, or, in more easy and allowable terms, disunites the parts of a calculus, by dislodging or destroying the gluten or medium which holds it together; it is (I would observe) as impossible it should do this in one instance, and not hinder the growth in another (still allowing for the diversity in the composition of the calculus), as that water, which extinguishes a fire to day, should, to-morrow, permit its flames to extend themselves uncontrolledly.

Endless have been the experiments of chemists and natural philosophers upon this extraordinary substance, which, as has been observed in another place, forms in the bodies of children as well as in those of

men and women ; in the temperate as well as in the luxurious. Nor can any habit or constitution, however well examined and inquired into, lead the physician to pronounce it exempt from the danger and ravage of this terrible disease !! No time of life can promise an immunity from an attack. Many of the patients who have resorted to the remedy which has given rise to these pages, had attained the age of three-score and more, ere they had been visited by the smallest indisposition of stone. Some of the younger patients, who have been relieved from its distressing effects, were under four, and even under three years of age. Mr. A. Cooper successfully performed the operation, a short time since, upon a boy not four years of age, the son of Mrs. Hone, at Ilford, in Essex.

Seeing, then, that both sexes, and that every age (even to the infant sucking at the breast), as well as that the most varied constitutions, are liable to the stone; it might reasonably be supposed, that the composition of the different calculi formed in such dissimilar habits or constitutions would not be uniform, even in their compositions. The case is certainly so, as well with respect to their density as the relative proportions of the ingredients with which they are composed. The stones in children, for instance, are far less tenacious or hard, as is easily proved by choosing from two different calculi a fragment of equal sizes, and ascer-

taining their specific gravities. Another circumstance to be noticed is, that the stone in children has ever been so much sooner dissolved than that in men ; indeed, it may be affirmed, that scarcely ten patients of this class, from the first appropriation of this remedy, have failed to obtain a perfect cure. In those unsuccessful cases it was visible that the pain and duration of the disorder had so preyed upon the vital organs of the tender patients as to superinduce hectic fever, and its near attendant, *consumption*.

With regard to the other sex, the same reasoning may be used, for, indeed, nearly the same results have been witnessed. Few, very few, have been the instances where the Solvent has been administered in vain ; and, although this class of patients may naturally be supposed to feel a repugnance to speak of what they may have suffered under this unsparing distemper, yet several physicians, as ocular witnesses, readily bear testimony to what is here set forth. The late Lady Lyttelton, indeed, whose sympathy for the miseries of others was equal to her delicacy, made no secret of the cure she received from the medicine, though the case had been considered as desperate by Sir John Elliot, and by the apothecary who had attended her for eleven years.

A case in point has occurred within these few months, in that of a young lady at Brighton, who was sent to that place for

the benefit of the sea, and whose real disorder might not have been known, or timely discovered, but for the aggravated symptoms manifested after almost every time of bathing. These happy proofs of the efficacy of the remedy in question are, however, less properly dilated on here than in another part of this work.

Ere this digression, it was intended to shew the reasonableness of the supposition that, under the varied circumstances above-mentioned, the concretions found in the bodies, or cut out from the bladders, of persons of such dissimilar habits, would vary in colour, tenacity, and composition. They are observed to be of every shade, from almost white to almost black. Some are so compact as, if not well examined, might be mistaken for stones of the earth, while others are as light and almost as friable as calcined fuller's earth. The composition, too, of the human calculus, from various subjects, evinces as great a departure from any rule of proportion, with respect to the ingredients which make up its bulk. In one experiment the *lithic* acid is found to prevail; in another that of the *uric*; in a third the fixed air abounds, so much as to constitute one-half and more of its bulk.

To evince the certainty of a condensed fixed air, constituting a great part of the human calculus, it is only necessary to observe that it is hourly escaping, in some de-

gree, from it when first taken out of the body, and that, if the calculus be exposed to continual heat, the air flies off in a more hasty manner.

The experiments of Scheele, indeed, have left us in no doubt as to the prevalence of fixed air in the composition of all human calculi;—in this point the calculus may be said, more or less, to agree.

It is here deserving of peculiar note, that, in illustration of the doctrine of the exuvix of bones, or the subtile and imperceptible matter arising from the attrition of the bones' surfaces, being a chief ingredient in the calculus, that **HALF A CUBIC INCH OF THE TIP OF A FALLOW DEER'S HORN, PRODUCED, ON DISTILLATION, ONE HUNDRED AND SEVENTEEN CUBIC INCHES OF AIR!!** Ought not this unerring and undeniable fact to be a stimulus, and also a guide, to future labours in furtherance of the discovery of a **SOLVENT**, which may not only be called **SPECIFIC**, but also, in every obvious case, be deemed *infallible*?

It is enough, then, for the reader's satisfaction, that the main ingredients of the stone are known, though their accurate proportions may never be exactly ascertainable; for, although we begin with Berthollet, and follow the different experimentalists of the National Institute of France, we shall have gained very little more than our own chemists have obtained for us, except a new nomenclature and a novel arrangement. One

thing, however, must be allowed, and in that we owe some obligations to our scientific neighbours ; they have (Lavoisier, &c. for instance) set us upon the inquiry into the peculiar qualities, or rather affinities, between the calculous, muriatic, and phosphoric acids. Should future and more satisfactory experiments confirm the suspicion now entertained by many professors, that the most powerful of the concreting ingredients has actually an acid basis, we may reasonably hope to derive additional benefits from such results as are admitted by all to be accurate. The author hopes, through the co-operation of an experienced chemist, to be able, in his next edition, to offer to his readers considerable additional satisfaction on this important subject.

In the mean time it may be observed, that it is one of those anomalies or mysteries in the animal economy, that the blood and its serum, from which the urine is secerned in the kidneys, cannot be made to discover, by any experiment, the least portion of acid whatever. Nor can any be found in the chyle, from which the blood is formed. And yet no sooner has the above secretion taken place, that is, the separation of the urine from the blood, by means of the renal glands, than the calculi formed in that very urine abound plentifully with an active acid, presumed to contain the concreting property which commences the work of a stone. Astonishment may, however, be abated by the

laying open the general nature of the action which occasions it. Let us reflect, then, on the prodigious changes which are wrought in plants, as well as in animals, by the effects of glandular *straining* only. This property pervades the vegetable kingdom in a no less remarkable degree than that of the animal. For instance, a tree, growing from the same root, fed by the same sap, that is, deriving its whole sustenance from the same soil, the rising fluid passing only through different glands or convoluted fibres, in the manner of straining, produces fruit varied in colour, shape, and flavour. Thus, in a garden at Attimore Hall, in the county of Hertford, once belonging to the author, there grew, from one and the same root, three different species of plum, viz. the green gage, the Orleans, and the muscle plum, the latter being the original stock or stirp into which the other fruits were grafted. Is it, then, matter of wonder that the nature and quality of the urine should be different after passing through a different and additional set of glands or strainers, when the above familiar yet surprising operation of nature is duly contemplated? The calculus formed in the kidney is, indeed, different from that generated in the bladder; perhaps not less so than the different products of fruit, as just instanced, and which arose solely from the various channels through which the same sap for feeding their growth circulated.

§ III.—ON THE NUCLEUS OF THE STONE.

By attentively considering what has been said on the nature of the urine, and its tendency to run into *petrification* as soon as it is secerned from the blood in the kidneys, should it meet with any substance or matter capable of becoming a nucleus ; we may, not unaptly, call such nucleus the *fœtus* or embryo of the stone, for whose growth the urine, we are convinced, sufficiently abounds with aliment at all times. Now, as we are fully convinced, that a drop of blood, a portion of a ruptured fibre, a globule, or any other figured bit of detached mucus, too tenacious for instant solution, is susceptible of being made a *nidus* or nucleus of a stone ; and being equally assured, too, that an irregular and luxurious course of living must naturally interrupt the due concoction of the aliment in the stomach, and thereby vitiate the chyle and blood, and that, above all, indulgence and too much repose on soft beds must give facility to the urine to deposit its earthy or feculent part in the viscera or organs through which it ought freely to pass ; it is matter of wonder that more persons are not, in this age, and especially in this voluptuous city, attacked with the disorder.

It is, however, deserving of notice, that great numbers of persons do pine away and die of the malady, especially women, whose cases, from the ambiguous symptoms some-

times attending them, are mistaken, and ascribed to other causes. The female sex are never so communicative on these occasions as the other; and to this reserve may be added the doubt which certain critical ails, to which they are exposed at different periods of their life, throws on the communications they make of their sufferings. The kidney, too, though a viscus of importance, and on whose functions, duly performed, the body relies for its well-being (at least as far as that one kidney should perform its office, for we know that a man lived to the age of fifty and more who never had had a second kidney), yet it is not so quickly affected by its danger in an attack of this or any disease, as most other parts of the body. The sense of feeling in it is rather obtuse, inso-much that Baglivi, as well as many modern writers of account, has related several cases of the substance of the kidneys being destroyed without the patient having complained but in a trifling degree.

The same cannot be said of the ureters, which connect the kidneys with the bladder: the exquisite sensibility of these is so great, that a bit of rough stone, after leaving the pelvis of the kidney and endeavouring to make its way through one of them, has excited so much torture as to drive the patient almost to distraction, and many have died under the agony, or by the hemorrhage of blood occasioned by the stone's lacerating its tender coats while forcing a passage. This

is a subject, however, which properly falls under another head.

After what has been said in a preceding section, of the tendency of the urine in the most healthy persons to run into concretion, whenever it meets with a suitable nucleus, and being informed in this, of the variety of matter capable of performing that office, it follows, of course, that persons are more liable to the gravel or stone in the kidneys than in the bladder. For, although the kidneys cannot be called receptacles for the urine, but only strainers of it from the blood, yet in sedentary and infirm people the disposition of the urine to give out its saburra cannot fail to meet with opportunities to shew itself within them.

There are writers on this subject who go so far as to advance that the stone in the bladder is never formed but from a renal stone as its nucleus; or, in other words, till a previous concretion has taken place in the kidneys. It must be confessed that most of the stones extracted from the bladder, exhibit, when carefully sawed through, a regular well formed nucleus, sometimes round like a pea, but generally of the form and shape of a *kidney-bean*.

Without denying or concealing this fact, however, when we do but reflect on what we unquestionably know, that any extraneous substance introduced into the bladder will assuredly become the nucleus of a stone, and that the vessels and coats of this organ are

equally, with those of the kidneys, liable to be injured, and consequently as subject to extravasation of blood, &c. we see no reason why a calculous disorder may not originate here as well as in the kidneys.

We see nothing, however, to weaken the reasoning on, or to injure the course pursued in the relief of, the disorder by giving way to such opinion and belief, at least as far as concerns ordinary cases. Whether the calculus were to be formed partly in the kidneys or wholly in the bladder, the elements of which it is composed are the same, the power in any remedy to dissolve or expel it is the same; since the chemist finds no difference in the elementary parts which compose a calculus, confessedly formed from a renal stone for its nucleus or basis, and one taken out of the kidney, with only a minute particle of blood, or the accidental concurrence of two or more of the primitive particles in apposite position for its basis. The language, therefore, that would endeavour to paint the *gravel* of the kidneys as of one nature, and the *stone* as of another, or both of them differing from the same disorders in the bladder, is a barbarous jargon, unworthy of science and its progressive improvement. The stone in either kidneys or bladder is but the gravel to a greater degree; and the only rational distinction that can be made between them is, that when the calculi are small enough to pass through the urinary canals without preternaturally distending

them, the complaint may be comprised within the denomination of *gravel*, one degree beyond which may, with equal propriety, give it the name of *stone*.

The only point which concerns the patient on this hitherto undefined question, is, how far it may be advisable to take strong diuretics (whose operations we are not so well acquainted with as we wish to be) in the view to propel the offending calculi from the ureter into the bladder, or from the bladder through the urethra; or whether, in the case of a stone too large to pass these tubes without great dilatation or laceration, it may not be unsafe to give any medicine of a forcing nature. These are considerations which, perhaps, can never be safely decided on by the patient alone, but are more properly referable to the physician: more, however, will be said on this subject in the course of the subsequent pages.

Various have been the causes assigned for this disorder by writers who have professedly treated on the subject, many of which it would be idle, if not ridiculous, to repeat. Several reputed physicians among the ancients were led, by the specious reasoning of a predecessor, to countenance a belief that it is caused by indurated mucus, which was represented as forming a bed or receptacle for the earthy matter, or, as they not unaptly called it, *nature-stone*. In support of this doctrine, they instanced the quantity of mucus with which the urine of calculous pa-

tients abounded ; but in this respect we run no hazard of being thought rash in affirming that they mistook the effect for the cause. What excuse shall we otherwise find for those professional men who, at this day, prescribe mucilaginous medicines, in large quantities, by way of emollients, and with the view to blunt the supposed increased acrimony of the urine? In truth, as far as such remedies do afford relief, it must be upon the principle of their restoring, or rather replacing, the natural mucus or lining of the passages which has been abraded by the friction of so hard a substance.

A modern writer, however (the late Dr. Austin), has, very unexpectedly, adopted the idea of mucus being the cause of the stone ; but his reasons are very incompetent to maintain a doctrine we conceived exploded for ever. Every day's experience must convince the observing practitioner that the mucus discharged with the water of calculous patients is almost uniformly proportioned to the size and roughness, or, in other words, to the urgency of the stone. Many able writers, and none more than Goulard, in his treatise on the disorders of the Urethra, have proved that an irritation of the urinary passages alone is capable of producing a quantity of mucus.

Since it is an acknowledged fact that the primitive particles of stone naturally attract each other, and that several of these entering into contact with each other, in appo-

site positions, become of themselves a nucleus for a further accumulation, without the interposition of any foreign matter; and since it is a fact still more obvious that the gravity of such concretions will be increased in proportion to the number of particles so attracted, we may very readily conceive that in a short time these conglomerating stones will become too heavy to swim in the circumambient fluid, but will subside in globules or other figured calculi into the pelvis of the kidney. In this state they may either be evacuated through the ureter, or they may again attract each other in that aggregate form. The grape-stone calculi, frequently voided by nephritic people, prove this incontestibly to be the case.

Numerous familiar experiments in the ordinary occurrences of life, shew that mutually attracting bodies, while floating in any liquid, are more or less capable of exerting their attracting powers as they are more or less agitated to and fro in such fluid. From a parity of reasoning on facts so well established, a mind, though but ordinarily endowed, can readily conceive that too much repose, a continued curvature of the body, as in writing or reading, but, especially, lying too long in a horizontal posture, must contribute in an essential degree to the foundation of the disease we are treating of.

When a man sits, or stands upright, the passage of the urine from the kidneys to the

bladder is nearer perpendicular. Even gravel and stones, assisted by their own weight in such a position, often descend with ease into the bladder. The case is otherwise when a person reposes in a supine posture. Nothing is more common than for a sufferer in a nephritic disorder to date the origin of it to an accidental confinement to his bed, whether from a fever, fracture, or other similar cause.

A writer of some eminence has remarked, that out of a hundred nephritic patients, above eighty are affected in the left kidney. The fact is not to be denied, the author has experienced as much; but we are less ready to agree with that writer as to the cause he assigns for it. He thought it was because the spleen cleansed the ichorous filth of melancholy blood into the left kidney, rather than into the right; for at the time our author wrote, an opinion prevailed that the spleen was the preparatory organ and receptacle of melancholic humours.

Hoffman thought the left kidney was most frequently attacked, because of its proximity to the flexure of the colon by which it was often compressed. But the most probable reason is, that it is much more customary to lie on the left than on the right side.

The learned Hales advises us to sleep as soldiers do in barracks, by way of avoiding the stone in the kidneys, as in this position of the body the kidneys are higher than the bladder. He is of opinion, that the stone

increases faster in the bladder than in the kidneys; a circumstance not to be doubted, when it is recollected that the bladder is scarcely ever quite void of urine. He thinks too, with many others, that the stone in both kidneys and bladder grows more rapidly in summer than in winter, because the urine is higher coloured, and more acrimonious, from the dissipation of a greater quantity of its aqueous parts through the increased perspiration at this season, or from the frequent sweating which hot weather occasions.

It has been affirmed, by several writers, that renal calculi are always of one colour: this is certainly a mistake. Many which have been traced in their passage through the ureters, and soon after evacuated with the urine, have been observed very dissimilar in that respect; where their stay in the bladder also has been too short to affect them in this respect. They are, in general, of a yellowish red, sometimes of a darker brown, but others have also been found nearly white.

But a great portion of the mass of writing and reasoning upon this interesting subject, up to the present time, may be considered as little better than nonsense. The combinations of the chief constituent parts of the human calculus were very little known to the antient chemists. Except in two of the antient professors (and the one appears to have adopted the idea from the other), the

possible and plausible circumstance of *bony exuvia* entering into the formation of calculus, has, we believe, not been hinted at. Bergman and Scheele, among the first of the moderns, by a very satisfactory process, discovered it to be composed of a species of salt (*sui generis*), and an earthy basis. Of the existence of this salt nobody can doubt, nor of the aptness of the distinction of it; for it has been described as requiring four hundred times its own weight of water, with the action of heat, to dissolve it!—and even after that, the greater part of it would crystallize again upon the solution being allowed to cool!

M. de Morveau, a French chemist of eminence, first gave to this concrete the name of *lithiasic acid*; but M. Lavoisier, still more distinguished by his chemical and philosophical knowledge and researches, and especially by his cruel fate, denominated it the *lithic acid*. It is not intended, however, to enter largely into the chemical analysis of the human calculus, nor to give the details of the above authors, or the experiments of others, upon it; the prescribed limits of the work, as well as its professed design, viz. that of *pointing out a safe cure for the disorder*, forbid it. Nor would the result of so much investigation afford the reader that satisfaction so much to be wished for. After all the reiterated experiments made by the most scientific of our chemists, this acid, as it is called, which constitutes so

large a portion of the human calculus, is still undefined: its affinities with the salifiable bases, so accurately arranged by the zealous reformers of the old, or rather composers of the new, chemical nomenclature, have not been determined; nay, more, though this substance is represented, by the before named professors, as slightly *acidulous*, others of equal eminence, and who have devoted a good deal of their time to researches of the same nature, do not admit it to be an *acid*, but a *neutral* salt. The French author of "Elements of Chemistry in a systematic Order," considers it as an *acidulous phosphat of lime*, and consequently excludes it from the class of peculiar acids.

But whether, after due experiments with the juice of violets and other vegetables, it should finally turn out to be acid or neutral, it can in no degree recal or weaken the motives for publishing the present work, since the medicine therein pointed out for removing the disorder is not recommended by the specious and imposing influence of an hypothesis, but offered on the confidence which arises from facts and experience.

Without enlarging, therefore, upon this part of the subject, it is sufficient to observe, what all are agreed in, that the human calculus is made up of the dubious salt above mentioned, of an excess of an animal and earthy substance, containing, to all appearance, a portion of bony exuviae, together with a certain portion of mucus or ge-

laminous matter, serving to cement those earthy and animal particles and the salt together, thereby giving the whole the consistency and compactness of what has been (though not altogether properly) called *stone*.

A very small proportion of carbonat of lime would unquestionably give an *acidulous* quality to the composition of the whole, and this we know human bones to contain in abundance, as well as a proportionate quantity of every other of the constituent elements or parts of the human calculus.

The theory of the attrition of the bones is so far from wild, that it is highly rational. The bones of animals, fed upon madder and other colouring vegetables, have been found to partake of the colour of them in laminæ or layers, and, afterwards, the same animals fed on pulse, or other substances without colour, the bones throughout have returned to their original colour. What then became of the tintured laminæ? Why, thrown off and carried out of the body in some way or other. In like manner in the human body, where every part is undoubtedly changed or replaced many times in the course of life, that which is worn from the bones and other solids by the perpetual attrition of the fluids against them, in the course of their circulation, becomes useless, or worse than useless, *offensive*: nature endeavours, in that case, to throw it out of the habit like any other excrementitious matter. Any part, then,

which should happen to remain unexpelled, partakes, in a great measure, of the nature of an *extraneous* body, and, under that character, what mischief may it not do, if deposited in the kidneys for some time? The quality of the urine at all times, and the power of *attraction*, will fully answer that question.

As, in the course of this small tract, it will not be admitted, but denied, that the matter of the human calculus is received with the water or other fluids taken by the mouth; and as, on the other hand, it has been proved, that the urine of every person, whether in health or otherwise, contains this matter for the stone's formation and accretion, it has been thought advisable and even necessary to lay the experiments, detailed at the end of the next section, before the reader, in demonstration thereof.

§ IV.—OF THE FORMERLY ASSIGNED CAUSES OF THE STONE.

The occult cause of stone must always have been a subject of considerable interest among medical men, and must have occasioned a variety of opinion. Galen* (whose notion of it could not fail to have great weight about his time), thought stones were generated in those habits wherein the

* Comment. in text vi, lib. iii, Epidem. Chart. t. ix, p. 128.

sediment of the humours was conereted by a violent heat. His words are, "*Calculos illos in corporibus procreari, in quibus humorem crassamentum igneo calore concretum fuerit.*" Whence he conceived children to be more exposed to the stone, "because they are voracious, possess more heat, and always void turbid urine." The whole medical school of that age, adopted that eminent man's opinion; viz. that inspissated or indurated mucus was the foundation of stone, and endeavoured to confirm it by various arguments, which, however, are not of sufficient cogency to be repeated.

These physicians, therefore, recommended to their patients to be careful not to heat the kidneys by lying too warm, or exposing themselves to the heat of the sun, or of a fire; and many imagined that to sit at the table with one's back toward the fire was sufficient to produce a stone. But this theory, like many others in medicine, which have scarcely had plausibility for their foundation, was quickly overturned: for mucous concretions were undeniably found to soften in water, and, in time, to dissolve wholly therein, which stones do not, but which they would however do, if they consisted of inspissated and indurated mucus. Others being struck with the early attack of infants by this disease, and, especially, with the circumstance of stones being lodged in the bodies of fœtuses in the womb, and considering it not improbable but that a little milk might flow

to the uterus during the last months of pregnancy, they were disposed to ascribe the origin of the stone found in the bodies of such foetuses to the *cheesy* particles contained in that small quantity of milk, and this opinion received considerable strength by the anatomical observations of Professor Ruysch, which evinced the prevalence of the disorder in that country where so much cheese was eaten. But Denys, who has been before mentioned, contributed not less to overturn this opinion than the one started by Galen. For as well as affirming that, after a residence of some years in the East Indies, he had found very few calculous patients in that hot country; so in particular in the populous city of Batavia, the celebrated Dutch emporium of the East, where, exclusive of the Dutch themselves, people of all nations resort thither, and where a great quantity of cheese, hard bread, and salt provisions are eaten for eight, nine, or more successive months, he could find in that whole period of seven years, but two patients who were obliged to submit to the operation of lithotomy. Be it remembered, too, that the water the people of Batavia drink, flowing from the neighbouring mountains, is greatly impregnated with earthy and stony particles.*

It has been affirmed, and indeed acknowledged, that the children of the poor in this

* See my experiments and observations with respect to distilling water.

and in other countries, are more afflicted with this disorder than those of the rich; the reason appears to be as follows:—The parents, more especially if they live by field work, such as weeding, &c. are forced to work hard to maintain their offspring, therefore cannot bestow much time in nursing, but leave their children a great while together on the ground, in a cradle, or in a supine position. Further, that these helpless infants may suffer this neglect the more quietly, and annoy nobody with their cries, they have given them syrup of poppies, *Godfrey's Cordial*, or some other such opiate, which lays them asleep. Thus, the little unhappy creatures lie night and day in a half torpid state, and are left neglected till it suits the mother's convenience to move and clean them. The women who nurse the children of the wealthy are prevented from acting in the same manner by the vigilance of the parents. Even when the children are a little older, and could walk with a little help, and consequently are retained with more difficulty in a recumbent posture, they are still confined, by being set a great part of the day on a perforated chair, to give the same opportunity to the mother to pursue her other employment, and thus these wretched offsprings of poverty, by being deprived of due exercise, become callous, or, at least, rickety or bandy legged.

The Dutch writers have affirmed also, that more poor adults than rich were afflicted with

this disorder, and this they ascribed in a great measure to their want of many of those conveniencies which are so much within the reach of people of easy circumstances. But as rest of body is acknowledged by those very physicians, as well as by medical authors in every part of the world, to favour the generation of stone; such an opinion might seem a paradox, were it not made known that vast numbers of the poor in Holland get their livelihood by sedentary employments.

Women, it is certain, are seldom troubled with the stone in the bladder, owing to the shortness and nearly rectilinear direction of the urethra (it not being crooked as in men), as also of its greater width, which affords an easy emptying of the bladder. But women are as frequently, if not oftener, afflicted with nephritic disorders, and with stones in the kidneys, but which, from their natural and accustomed delicacy, they are less disposed to speak of than men are.

To account for children, though naturally active and fond of motion, being nevertheless so subject to the stone; the above writers would have it considered that, during the first part of their lives, they endure the evils of a bad custom, which is, that of being bound tight round the bodies with rollers, whereby the kidneys (as they insisted) are easily compressed, and the free secretion and excretion of the urine obstructed. DENYS, the expert lithotomist, in Holland, (where

the operation was carried to a certain point of success, much earlier than in England) recites * numerous cases of very young children having stones extracted from them, and in the next page he informs us that he was obliged to perform the operation of lithotomy on a boy only two years of age, from whom he extracted a very hard stone.

Subsequent authors who treated of this disease, imputed it to an error in the non-naturals, and especially to the too free use of crude unfermented liquors. It has since been said to arise from the tartar in wine, to which it has frequently been compared. France has, therefore, been mentioned as a country where the stone was more common than in any other; Paris more particularly has been pointed out as always abounding with calculous patients, from another cause being conjoined to the former, viz. that of the water of the Seine being charged with sand. It was said, that the pipes through which the water was conveyed for the use of the Parisians, as well as the butts or vases employed for filtering it, were incrustated with stone. The great works at Marli, for supplying Versailles with water from that river, demonstrated however nothing of the kind. And as to the cisterns or *cuvettes* in which the water is allowed to repose and grow fine, they offer no argument either way. It will not be thought surprising that they should accumulate a great quantity of earthy fecu-

* Heelkundige Aanmerkingen over den Steen, p. 97.

lencies, since every flood after a great rain washes down and carries in its torrent abundance of sand from the hills; so that the Seine exhibits a turbid or red muddy colour. Hales, however, assigns the circumstance of so many persons being cut for the stone in that city to the before-mentioned cause, not reflecting that the frequency of the operation of lithotomy there, arose from the great reputation of the operators, which drew the afflicted sufferer from very distant places to the metropolis; many of them from villages with which the Seine had no communication, and from districts probably where wine was not, but *cider* was, the common beverage.

Reflecting on the many and variously alleged causes of the stone, and of the fallacy of the reasoning thereon, I was desirous of being satisfied how far water might be freed from any earthy quality, so as to deserve to be considered as wholly homogeneous, or, in other words, *a pure elementary fluid*; and in that view to shew what hope or probability there might be of exempting whoever should drink it, and it only, from the danger of the stone and gravel—I therefore set about making the following experiments:

I caused a tin kettle to be made in the common form, except that the cover was raised, by means of a jetting open rim, to the height of an inch, and being of a larger diameter than the kettle itself, it entirely kept out any dust that might accidentally fall

down the chimney, while its construction as readily suffered the water to evaporate. I then set a common alembic to work, in which I distilled several hundred gallons of New River water, and supplied the evaporating kettle from the worm as it ran off. The head of the still had a swan neck, and being slowly worked, nothing but the fluid in its purest state could be drawn off. After thirty-six hours' operation, I suffered the kettle to run dry, and, examining it carefully, I found a considerable portion of saburra or earth, after the manner of the fur or crust adhering to a tea-kettle.

And further to prove the impossibility of obtaining a *strictly* elementary or homogeneous fluid, I made an experiment with snow-water in a smaller degree, but sufficient to discover that it also yields a crust after a continued evaporation. This led me to conclude, that there is no prospect of obtaining a pure water that does not contain a portion of earth; and I am fully persuaded, that if the evaporated fluid had been again condensed, and made the subject of a third coction, there would still have been collected some particles of earth. In a reiterated distillation, I suffered the water, after it had been drawn off, to stand covered over three days, and boiling it the same time as before, a greater quantity of saburra was collected; by which I conceive, that the primary particles of earth had time to attract each other, and consequently, by increasing their specific

gravity, were less liable to be carried off in the effluvium or vapour. Now, although we should construct a still with a neck of ever such a height, that much more of the grosser earth might be detained in the bottom (for I forgot to mention that a great deal more *saburra* was found in the still than in the kettle, although the water was at first apparently clear), yet that would not be likely to do more than catch the particles in a collected state; for it is obvious that the primary particles of stone are many times lighter than quicksilver; and yet that ponderous body can be so rarefied as to be borne up by a very subtile æther, or fine vapour. It is therefore plain, that although you might distil water until you could no longer discover visible stony particles in it, yet would that not prove that it contained none; it will, on the contrary, be found, that after water has been filtered, and distilled, *as it were*, through some of the finest vessels of a human body (which are a thousand times more exquisite and elaborate than any *art* can invent), I say that, after all this, it will be found to contain more or less of primary particles of stone.

What then, after all this, can be thought of the affirmed petrifying quality in certain waters, such as was said of that of the Seine, where, indeed, to the other reasons of disbelief of any such cause, may be added the probability that as many persons have been operated upon in London during the last twenty years as in Paris?

I have made use of the words “more or less,” in speaking of the earthy matter which may make its way into the circulation, in spite of any endeavours to prevent it, since whether that *earthy* or *siliceous* matter which enters into the composition of the stone be conveyed to that stone distinctly by itself, or only in the shape of *exuviae* from the bones, after having been employed in the growth of, or communicating stability to, the bones, it must be equally concluded that it can originally be conveyed there only by the mouth and stomach. That a supply of such firm and durable substance is perpetually required to make up for what is hourly throwing off by attrition, must be clear to the plainest capacity. How much, then, does this operation in the human body elucidate what is said in Scripture—“How wonderfully and fearfully are we made!”

Some time after I had made the foregoing experiments, I was informed that a gentleman of Lincolnshire had been cut for the stone, and, in hopes of avoiding that cruel persecution again, had furnished himself with a still, through which he had drawn, for four years, every drop of water he used; not only to drink, but even to prepare his victuals in; and yet he was unhappily seized with the disorder a second time in his kidneys. Many other persons have been led to drink only distilled water, from a notion of its being entirely freed from its earthy particles; which idea, indeed, has, at first view, a great deal of plausibility in its favour,

though no absolute benefit could ever be inferred from the caution. It is worthy of consideration, whether the water, having undergone the action of fire in distillation, is not deprived of a quality fitting it for the general purposes of health.

§ V.—INFERENCES FROM THE FOREGOING.

Seeing, then, that we cannot, by any known operation, free water from a certain portion of earth contained in it, we must conclude that water possesses the *essential matter* of the disease; notwithstanding which the disease cannot be absolutely laid to the charge of that necessary fluid, because millions of persons continue free from stone or gravel, who, nevertheless, drink freely of it. But, as it is not in our power to prevent the disease from falling to the lot of many, it behoves all, so circumstanced, to watch its commencement and hinder its further encroachment.

In order the better to understand this subject, as to what is, and what is not, the cause of the stone, it is necessary to describe by what means the fluids we drink are conveyed to the blood; from which it will appear, that although a man should swallow a quantity of sand or powdered stone in his beverage, he would be no more liable to have a calculus form in his body, than if he had taken the fluid in its natural state. The reason for paying particular attention to this point is, that many persons with cal-

culous disorders have ascribed them to *local* causes, rather than to those which they carried about them; and have been induced to change their residences for others, perhaps, less commodious and less beneficial. A hard water and neighbouring petrifying spring have driven many a nephritic, and his whole family, to a distance, and even to the extreme part of England. The author, however, is now of opinion, that were a calculous patient to drink the water itself of the petrifying spring, or well, it would not hasten the growth of the stone; so great is the change which every thing taken into the stomach undergoes before any part of it enters into the blood, and, still more, before it impregnates the urine.

The chyle is conveyed to the blood from the stomach by means of small lacteal tubes or pipes. Nothing can pass from the mouth, or, more properly, from the stomach to the blood, but by means of these concoctive strainers, which are the smallest in an animal body. If this were not the case, such particles of matter might be admitted into the blood as could never be discharged again, and, consequently, would be productive of the most inveterate obstructions. Now, it is evident, in facts drawn from microscopic observations, that the largest blood globules do not exceed $\frac{1}{2000}$ part of an inch in diameter; it is also well known, that the diameter of a particle, visible to the naked eye, must not be less than the $\frac{1}{100}$ part of an inch; whence it follows,

that the magnitude of one of these large blood globules is less than the largest visible particle in the proportion of 8000 to 1; and, therefore, should these blood globules, without any further attenuation or division, be supposed to pass the glandular secretories, they must come off in an extremely thin attenuated effluvium or vapour, the particles of which would be 8000 times less than any sensible or visible particles; but it is certain, that the diameters of the largest secretory duct, or glandular strainers, must be less than the least of the blood globules, otherwise these blood globules themselves would pass those strainers, and be thrown off in bloody secretions, which we know cannot happen in a natural state of the fluids and solids.

How much less the smaller globules are than those already taken notice of, cannot easily be ascertained, since they are imperceptible, even by the best microscopes.

It is a fact, that Lieuenhoek, and others, have discovered an infinity of these secretory and excretory vessels, the diameters of which do not exceed $\frac{1}{80000}$ of an inch, and, consequently, a fluid cannot pass and re-pass them, until it has been so far rarefied and volatilized, as that its largest particles shall be less than any visible or sensible particles, in the proportion of 512,000,000 to 1.

This great rarefaction of the fluids in their circulation, or immission to and emission from the blood, may seem strange to some,

and yet it is certain that fluids are capable of being rarefied or effluviated to a surprising degree of tenuity. To make this familiar to us, let us but consider how far the most dense and solid substances, as those of metals, may be divided or attenuated by art. Dr. Halley has proved (see Philosophical Transactions), that one single grain of gold is sufficient to overlay or gild ninety-eight yards of wire; and has also shewn that the thickness of these *lamellæ* does not exceed $\frac{1}{124800}$ of an inch, which is less than the diameter of one of these small excretory tubes before taken notice of.

From what has been advanced, then, it is obvious that nothing can pass the lacteals, and be taken into the circulation, but in the form of a fine attenuated vapour; therefore, all the powdered oyster and egg-shells, and other insoluble ingredients in pills and in the composition of several reputed lithontriptics, must be little better than useless, since, as they cannot be absorbed by the lacteals, they cannot impart much of their virtue by the action of the stomach.

This account of the economy of the secretions of the human body is, undoubtedly, wonderful; but it is a fact, that all the boles and minerals commonly prescribed as alteratives of the blood never reach that fluid. If it be asked, why impurities of the blood are often removed by cinnabar and other preparations of antimony, if these are not absorbed with the chyle? it is to be answered, that, by detarging the *primæ viæ*

and viscera, and cleansing the orifices of those vessels, a larger portion of chyle is conveyed into the mass of blood ; and, consequently, a disease may be gradually overcome by nature's evacuating through the excretories in proportion to such additional absorption.

Notwithstanding the surprising smallness of these vessels, we need not wonder how a body so large as that of a man should receive sufficient accessions and recruits thereby, when we consider the vast infinity of them, and that the stomach and smaller viscera are capable of absorbing and carrying to the blood, by their means, several gallons in twenty-four hours. It is not possible to say what quantity of urine the kidneys are qualified to secrete from the blood in that time ; but in a case where poison was suspected to be received into the blood, a man was so copiously supplied with diluting liquors, that he made seventeen quarts of urine in one night's time, the greater part of which, from its short stay in the body, came away limpid and tasteless. Thus much was judged necessary on this subject, as proving, incontrovertibly, that the French authors erred in assigning the cause of the stone to the water of the Seine. Neither can the blood be said to circulate or convey any concreted stony particles to the kidneys ; for the glands of the kidneys are smaller than the lacteals themselves ; therefore, if such concretions were in the blood, they could not pass, but would occasion disor-

ders more immediately fatal than that of which we are treating.

From the difficulty of establishing any new opinion, which militates against one generally received, it is thought necessary to relate the following experiments, which may be repeated by any indifferent person.

Experiment I. I took a fragment of a human calculus of five grains weight, and put it in the urinal of a person who never had had the least complaint of the gravel or stone, and whose water was perfectly transparent:—after continuing it there for seven days I weighed it, and found very little alteration; but considering that the motion of the urine, in making it on the stone, might dislodge any saburra that should loosely adhere to it, and thereby frustrate the experiment, I removed it into another vessel, and poured the urine gently into it after it was made; by this means it was suffered to be more at rest. At the end of twelve days I again weighed it, and found it had gained half a grain. I could observe, by the help of a glass, that the accretion was principally on the rough side, which was that broken from the complete stone. The same experiment I repeated with the urine of a child, and found almost the same result from it.

Experiment II. A gentleman applied to me to be cured of a stone in the bladder; but as he had, at that time, another disorder

to which an immediate attendance was required, I forbore, during a fortnight, to prescribe to the stone; but desired that his urine, during that period, might be poured upon a calculus of exactly eight grains weight: now, although its surface was larger than the first fragment, yet, at the end of the above time, it was not increased in the smallest sensible degree. I was not, however, perfectly satisfied with this experiment, suspecting that the medicines he was taking might have prevented his urine from giving out its share of earth; to clear up this point, I obtained the urine of two persons, under the same course of medicines, (*viz. mercurial*) in Bartholomew's Hospital, into which I immersed a piece of calculus, as before: at the end of only nine days it was increased nearly half a grain, from which it is demonstrably plain it was not any thing in his course of medicine that withheld the urine from resolving into that earth, which should have increased the piece of calculus, as in the former experiment.

The inference to be drawn from the above is, that the stone already formed in the former person's bladder attracted the earthy particles from the urine as soon as that fluid came into the bladder: I was further confirmed in this, by his telling me that for two years previous to his attack of the stone he had voided urine, at times, thick and muddy, or sandy; but that since, discover-

ing that he had a stone formed in the bladder, his urine had been clear, and free from sand or grit; nay, that it was bright as amber, except when he had taken any violent exercise, after which it would be loaded with mucus, or tinged with blood.

After making these experiments, and reflecting on their results, Dr. Priestley's Treatise on Fixed Air fell under my eye, which occasioned me to regret that I had not seen those volumes before, as they might have saved me much labour in discovering that we cannot prevent the stony atoms from making their way into the urine, since that ingenious author proves that earth can be suspended in air, and even rendered respirable.

The first experiment, with the evaporating kettle, shews us that the *primary particles of stone* are, in themselves, so light as to be carried in a vapour over the helm of a still. Quicksilver, itself, is indeed capable of the same diffusion: a subsequent experiment as clearly proves that the urine of all persons partakes of those particles, which, for perspicuity, have been denominated *primary*, since no operation or experiment can trace them higher than in the water from a fountain. Finding them there as undoubtedly we do, it would seem not more a paradox to affirm that water is nothing but a *liquid stone*, and stone no other than *condensed water*, than it would to repeat what the learned in every age have declared, viz. that "all flesh is grass." The first, the grand, the efficient

cause of the transmutations of bodies may never be unfolded to the understanding of the most scrutinizing of mortals. What perspicacious eye has pretended to discover, after the most elaborate view and search, why certain rocks petrify water running through them without losing any part of their own weight? In one of the subterraneous cavities or quarries under the Observatory at Paris, the water petrifies in filtering through the rock above: Now, although the quality of that rock is so well known, yet have not the French chemists, in analysing or decomposing it, been able to distinguish it, as to so extraordinary a power, from many other rocks wherein that quality is known not to reside. The great consideration with us, then, is what first induces the concurrence of those primary particles so as to become a nucleus of the stone; for, from numerous experiments, we find, that when once a nucleus exists in the body, it collects, by its attractive power, the primary particles about its surface, and accumulates into a stone.

By the economy of our frames it is required we drink a certain quantity of fluid to assist in assimilating our food, and to convey the nourishment of it to the blood, thence to be distributed for the growth and strength of the whole body; now, as it has been proved that water, in its purest state, still contains an infinite number of those primary particles of stone, it is evident that we are liable, every hour we live, to be at-

tacked with this disease. The cohesion of those particles, however, never takes place till they are carried with the urine to the kidneys; the reason of which, perhaps, is that the particles are kept farther asunder while circulating in the common mass, and consequently out of the power of each other's attraction. The globules of blood, by their spherical figure, must also have a considerable share in preventing the particles from entering into contact with one another. No sooner then has the secretion taken place in the kidneys, and the urine concentrated as it were, than the corpuseles are brought nearer to each other, and thus begin their attraction and cohesion. In like manner is the crystallization of salts obtained, which, however, never takes place till the fluid is, by evaporation, condensed to a certain degree, and the liquor, in which the salt is suspended, allowed to grow cooler.

But the most powerful impediment to the attraction and cohesion of those stony particles, while with the blood, is the continued circulation of that fluid; since, should they accidentally be brought into contact, the force with which they would be moved would, most probably, supersede the attractive and cohesive power, and separate them effectually. That this is actually the case in both principles may be illustrated by the experiment of two small globules of quicksilver, which, though strongly inclined to take up each other in the moment of con-

tact, yet, driven together with a force equal to the blood's circulation, they lose their attractive power. This is not only the case with cohesive attraction, but it holds good also in the other kinds, whether *magnetic* or *electric*.

Thus a sufficient reason is given why a calculous concretion never can take place in the blood; indeed, life would be hazarded thereby every hour. No sooner, then, has the secretion taken place in the kidneys, and, consequently, the fluid in which the stony atoms float been concentrated, than these atoms or corpuscles are brought nearer to each other, and begin and continue their attraction; for as soon as several of these particles shall have met in contact, their power of attraction is augmented (such power being in proportion to the surface of the attracting bodies), till, at length, from their increased specific gravity, they precipitate to the bottom of the fluid, in the shape of sand or gravel; and this is the state of the disorder which should be denominated *the gravel*.

The circulation of the blood through the kidneys, as well as through the liver, is naturally languid, rendering both those organs equally liable to obstruction. The jaundice is the consequence of the latter, as the stone is of the former.

Now, although the concretion, as has been already shewn, begins as soon as the urine is in the pelvis of the kidney, yet it may not arrive to such a degree as to form even

the gravel there ; but the urine, still more disposed and prepared for further concretion, may, and does frequently, complete the mischief in the bladder. Should this organ also be preternaturally feeble, as well as the kidney, a stone will undoubtedly be formed in a very rapid degree ; for, as soon as a conjunction or conglomeration of the particles has increased it to any material size, it not only acquires a multiplied power of cohesion, but likewise attracts from greater distances ; so that other aggregate particles will be taken up in its accumulation. This is manifested in those congeries of small stones, called grape-stones, the interior piece of which is always larger than those around it. It is, however, common to find several stones in the bladder, because, being generated in the kidneys, they may be thrown into the ureters so large, that they cannot be further taken up in the way of cohesion ; for, in this case, another power, viz. *gravity*, is opposed to attraction.

The phenomenon of the stone's accumulation being thus far traced through its progressive gradations, shews us clearly at what point it deserves, and requires, to be denominated *gravel*. The duration of the disease at this stage depends, as has been before observed, on the irritability or inertness of the kidneys and bladder ; for, under the former circumstance, a person may escape the stone a long time, by evacuating the *saburra* freely with the urine ; but, on the

other hand, should there be any debility in those organs, it is next to impossible but a stone and its accompanying evils will ensue:—it is therefore clear that gravel and stone are the same disease in nature and principle, and are only differently denominated according to the degree in which the progress is marked; consequently those persons who suppose them different in their qualities, and that, because they have spontaneously discharged gravel with their urine without inconvenience, they are not likely to have the stone, deceive themselves, and will probably be convinced, too late, of the fact.

To bring, therefore, into a more obvious point of view the cause of the accretion of stone, it must be considered that, as soon as the urine has been secreted from the blood, and in the kidneys, the work of *lapidification* begins; for it may be concluded, from all which has been said, that the urine always circulates *primary particles* of stone. Now, in the continual change of place of those particles floating in the urine, no wonder that they are brought near or into contact with each other, and, agreeably to the universal principle in nature, attract one another; it can, therefore, be no longer a mystery that some persons should contract, and others escape, the stone, any more than that some constitutions should perfect the work of the stomach's digestion or *sanguification* sooner than others. Exercise, above all things, promotes every secretion of the

body, and is, therefore, the best and most natural defence against the stone. Volition, too, will have its effect in the excitation to urine.

Intense study, we find, diverts the influence of the *vis nature*, whereby the urine and all the other excrementitious matter is retained longer in the body than its due time, and disease may be reasonably expected: this doctrine needs no farther confirmation than to instance the number of Judges, Clergymen, and others, leading a sedentary life, who are afflicted with urinary and biliary obstructions and concretions, as, from their avocations, they are often obliged to oppose the *vis resistendi* to the calls of nature, which cannot but do violence to her functions.

Having endeavoured to elucidate the progress of the stone's accumulation; it would be wished that an equal explanation could be offered, why the accretion is so surprisingly rapid in some cases. That animal salt is a necessary ingredient in the composition of a stone has been before manifested, and I am as greatly persuaded that the growth of a stone is determined by the quantity it meets with in the urine. To me it appears, that the quantity of ammoniacal salt is proportional to the longer or shorter time the urine remains in the body; for a pint of urine, newly secerned from the blood, will not contain a fifth part of the salt the same quantity will which has been

longer secreted. This is sufficiently evident in a profluvium of urine, where that fluid scarcely participates of the saline matter. It becomes, then, a wholesome reflection, whether it is not considerably in our power to check the redundancy of this salt in the habit by our manner of living. Milk, in this point of view, is a most salubrious aliment, it being formed from a pure chyle, the salts of which have been left behind.

The next question, deserving consideration, is, whether no preventative means can be adopted with advantage, especially in the case of those persons who are unavoidably obliged to neglect, often, for many hours, the excitations of nature. If the fœces are retained too long in the body, we, by cathartics, stimulate the intestines to reject them. Bile (so necessary to our health and existence, in a due proportion) is often redundant, and occasions disease; we, then, by deobstruents, stimulate the liver and biliary ducts to procure its expulsion; and, ought we not to be equally solicitous to purge the urinary canal, when its contents have been too long detained from passing off? The preventional medicine in question must, then, it is plain, possess diuretic qualities, yet it ought not to be of that class which is generally prescribed when gravel is already formed.

When a man has been too long withheld from an evacuation of urine, or through a spontaneous inertia of the secretories, that

fluid is too languidly secreted, from an attendance in the cabinet, a court of justice, place of worship, &c. and that paralysis of the bladder, stony concretion, or some other disorder, may be apprehended as the consequence; he is, when he gets home, or into a warm room, to order a bason of strong green tea, to which must be added a table spoonful of rum or brandy, and repose in a chair, or go to bed: these means will not fail to produce a necessary and plentiful discharge of urine, and take away all apprehensions of the evils alluded to. The above precaution, however artless in appearance, will secure many persons from the hazard of incurring a severe disorder.

It is hoped the reader, by this time, is fully satisfied of the *real* cause of the stone, which has given rise to so many hypotheses; and that the mystery of the *nucleus*, that hitherto inexplicable and undefined production, is expounded: it being found neither more nor less than the conjunction of two of those fixed or primary particles of stone; those two, when combined, attracting a third; those three taking up a fourth; and so on, *ad infinitum*. How many thousands of these may be necessary to make up a particle, visible to the naked eye, cannot be ascertained; but, it is certain that these atoms or corpuscles must be infinitely small, otherwise so many persons could not escape the disease, since it is proved that all have them in their urine.

Now, whether these *primary particles*, so much spoken of, be wholly *earthy*, and attract or attach the osseous matter floating in the urine to themselves ; or that they are actually *atoms of bone*, and, in that quality, attract the earthy matter in the urine, the consequence is the same. It were desirable the dubious fact could be ascertained. That both *earthy* and *osseous* matter does make up the composition of the human calculus cannot be, and never will be, denied by any chemist. Which of them is the most powerful agent in the unhappy work of the stony accumulation, is not ascertained at present ; nor which of the two admits of a most easy impression by a menstruum ; but it is an inquiry that ought not, and will not, I trust, be lost sight of ; no more than what will most effectually separate their cohesion, or hinder their attraction.

Of the disposition of the urine, charged with the above particles, *conjunctively* or otherwise, to run into concretion, no more need be said, than that, in St. Thomas's Hospital, the point of an ill-prepared bougie broke into the bladder of a patient, and generated a stone.—In Guy's Hospital, a bit of leaden probe did the same.

But the following case, without the preceding instances and the former experiments, would establish the point as much as it establishes the efficacy of the remedy about to be spoken of.

Mr. Chapman, at Sir R. Herries's, banker, in St. James's Street, some years ago, was obliged to suffer the frequent introduction of a bougie into the urethra. This he did for a considerable time, when, accidentally, one fell into his hands so ill prepared, that about half an inch of the point broke off, and lodged itself in the bladder, having passed the sphincter in its introduction. The accident being immediately discovered, he was a good deal alarmed, insomuch that he instantly applied to one of the surgeons of St. George's Hospital for advice, who consoled him by saying, that as the preparation of the bougie was composed only of linen cloth and an unctuous substance, no extraordinary pain was likely to ensue. "The plaister part," he added, "would, probably, be daily wasted, and the cloth, by conforming itself to the passage, might, at one time or other, be washed away with the urine; for, that since he had never had any the smallest complaint of the stone or gravel, or the least appearance of saburra in his urine, he would, in all probability, escape a disorder of that nature."

After this advice, Mr. C. persevered, as usual, for two months in the use of bougies, at the end of which time he left them off entirely, and remained in nearly the same state for about eighteen or twenty weeks. Soon after the elapse of that period, finding himself indisposed, he consulted me upon his case. He remarked that he had, for some

time, suffered an uneasiness at the neck of the bladder, and on that part where the waistband of the breeches compresses the abdomen;—he had also a frequent desire to make water, and felt an acute pain about the time he had done making it, and for a few seconds after; and was troubled with an itching or titillation at the glans or nut of the penis. From these indications, I immediately pronounced the existence of a stone in his bladder, and then I was informed of what is related in respect to the broken bougie. Now, though I entertained the greatest confidence of destroying the concrete formed upon the piece of the bougie, yet I told him, that the medicine I should prescribe him (of which hereafter) could take no effect on the rag itself; I was conscious, however, that by dislodging the concreted saburra, the saline part of the urine would act strongly upon the linen rag, and by its attrition, in time, wear it gradually away; and, the more to ensure success from this method of procedure, I advised him, even after the stony part should be destroyed and evacuated, still to take of that medicine enough to keep the urine from giving out the calculous matter of a stone, so that the rag would be kept always bare for the urine to act upon it. Mr. Chapman scrupulously followed my advice; the consequence of which was, that, in about ten weeks, the pain he had complained of left him entirely; and, in a few weeks more, the sand ceased

to come away, and there was every assurance of the piece of bougie being reduced to its natural state. After this, he continued to take, now and then, a dose of the before prescribed medicine, till, at length, he was led to believe that the rag itself was worn to pieces, as he had often discovered part of it in his urine: this expectation induced him to leave off the medicine entirely, but he was soon convinced that there still remained some portion of the bougie rag in his bladder; for the same complaints and pain were again revived, though in a slighter degree, and, for the second time, he was obliged to have recourse to the same remedy, which operated exactly as before. Indeed, the certainty of his being liable to the same attack, while any the least part of the extraneous body lay in the bladder, determined him to omit on no account, thenceforward, the use of the remedy, till he should be perfectly assured of its being totally wasted away. With this view he took, regularly, three bottles more, which, having brought him back to the state of ease he wished for, he then only took a dose now and then, but did not leave it off totally for eight months, at which period he had every reason to conclude that the whole of the rag was expelled the bladder. Happily, he was not mistaken in his conjecture; for, although it is now many years since he has taken any of it, he has had no complaint of the kind whatever.

Doctor Percival, in his *Essays*, vol. III, p. 165, relates the case of a bougie slipping into the bladder of a man, and a stone, of a considerable size, forming upon it, in less than a year. The stone was observed to have so much the appearance of chalk, that the Doctor was induced to try whether it was possible to convert it into quicklime. The experiment succeeded; from which he conjectures that hard waters, which contain calcareous earth, may contribute towards the formation of calculi which have a cretaceous basis.

The following lamentable case no less evidently proves the readiness of the urine to deposit its saburra as soon as its natural heat is diminished, which must be the case when it is excluded the bladder.

I was consulted by Mr. Dixon, clerk, in the office of the Secretary at War, for a complaint as nearly as can be described as follows:—He had had a stone in the bladder about eight years before that time, for which he was cut, and great pains were taken with the scoop to prevent any pieces of calculus from remaining behind, so as to form a new concretion: the excruciating pain he had undergone before the operation had a good deal impaired his constitution, but, nevertheless, the wound appeared to heal, and he was free from any great uneasiness for two years, when the cicatrix of the wound burst

open, and a fistula was the consequence, through which the urine frequently made its way. Topical remedies were applied to the superficial wound, and it was, by those means, again healed up; the consequence of which was, that, instead of a fistula, it became a sinus, where the urine lodged and gave out its saburra for a beginning concretion of stone, finding no longer a passage or exit on account of the new external cicatrix; for it may justly be conceived, that the eruption of that part where the incision had been made into the bladder, took place when the surface of the wound broke open, and, of course, there was an entire perforation into the bladder; indeed, a leaden probe, I was informed, had been more than once introduced therein through the fistula. The continued supply of earthy matter from the urine soon assumed the form of a stone, and it might be felt with the finger by pressing it on that part where the gorget had entered, in operating for the stone. All this while the patient was not much alarmed, as he could walk with indifferent ease, and, in most respects, was in tolerable good health—but, in this way he did not long remain, for the stone increased rapidly in size, so as to distend the part to a considerable degree, and, at length, force its way through the teguments of the muscles, where it formed a bed for itself. In this pitiable condition, Mr. Dixon remained without advice till, in fact, he could walk only with difficulty;

for the prominence occasioned by the increased dimensions of the stone, prevented him from putting one leg before the other but with torture; the stone had taken its direction chiefly near the scrotum. He applied to me at this period of the disease, when I found that the stone had burst open the cicatrix again; in short, scarcely any water came from him but through this cavity. I examined him with the greatest attention, from which I suspected the concretion *adhered* to the teguments, for it appeared then as immoveable as a bone. But for this reason, I should have immediately advised the cutting it out, as there could be no chance of its being dissolved in any reasonable time, it seeming to be larger than a duck's egg; besides which, there was another unfavourable consideration, namely, that the urine, though impregnated with the Solvent (the remedy prescribed to Mr. Chapman, in the former case, and which will be treated of under a distinct chapter), could only trickle over a part of the stone's surface, and not entirely surround it: however, as something was to be done without loss of time, and the incision could not be safely ventured on at that moment, I proposed to give him the Solvent by way of stopping the further accretion to the stone, as well as to try if its outward coat might not be smoothed, and his pain thereby abated; with the further hope, from the power of the medicine, that the stone might be lessened in dimension,

and a discovery effected of its being attached or not to the flesh which surrounded it. These promising hopes were fructified to a point beyond expectation; for in ten or twelve weeks the pain was mitigated in a great degree, and the stone might plainly be perceived to move by pushing contrary ways with the fore-finger of each hand. When he was assured, as well as myself, that the stone was not immoveably fixed in the recess it had made, he eagerly pressed me to the operation, by which he might be more suddenly rid of a source of continued uneasiness: his complexion, and emaciated condition, convinced me that his habit was in a very indifferent state, and, therefore, I directed him to live better than he had done; to take a glass or two of wine with his dinner, and a dose of tincture of bark twice a day for a month; at the end of which time, if he continued in the same mind, I would perform the operation, there being no prospect of speedily dissolving the stone, nor of his long pursuing his employment, about which he was extremely anxious. During this month, in which he had lived more generously than before, he seemed in better spirits, and a day was fixed for the operation, on which he was fervently bent. I had, by his knowledge and consent, desired the assistance of Mr. Clark, surgeon, an apprentice to the late Mr. John Hunter, with whom I had formerly dissected, and whose opinion I held in great esteem. This gen-

tleman agreed with me as to the safety of the operation, and I accordingly set about it, when I extracted a stone of an exceedingly hard and dense texture, weighing three ounces two drachms *avoirdupois*; its form, in a great measure, resembled a longitudinal section of a pincushion, with one of the horns running towards the anus, and the other up the sinus into the bladder: this form obliged me to enlarge the orifice I had first made for its extraction—a suture secured the only artery that was divided, and all appeared favourable. I visited him for three weeks, with every reason to expect his entire recovery. At this time, being myself seized with a *tertian* fever, I was under the necessity of removing into the country; during which time, Mr. Dixon fell into a very low way, and unexpectedly died. The wound, which was originally about three inches in length, had healed to about two, but had never yielded any well digested matter throughout, so that I apprehend the attenuated state of the blood and juices had occasioned his death. I requested Mr. Morse, of the War Office (in whose possession the stone is), to allow me to take an exact drawing of it, which he politely did—it may be deemed a great curiosity.

§ VI.—ON THE DENSITY OF THE STONE.

There being no doubt but that the different density of stones is occasioned by the

various or dissimilar figure of their elementary particles ; it follows, of course, that the intervals between the particles will be of various and different capacities, and, consequently, any medicine or solvent, whose property is calculated to operate upon the attractive medium which holds those particles together, will exert itself differently on various constructed calculi. As those stones of the earth are proved to be less dense and tenacious whose component particles are found to be nearest to globular, so probably may it be with the stones in a human body. The capacity or space between a peck, or any other given measure, of globes or round balls, will be much greater than that between the same bulk of hexahedral (dice), octohedral, or any other regular figures. Upon the same principle it is that the lighter and more porous wood will imbibe a greater quantity of water than that which is compact and close grained.

§ VII.—THE CALCULUS COMPARED TO TARTAR.

It cannot be thought amiss to give the opinion of one of our own eminent professors upon the calculus, as analogous to tartar.

Hales, to whom the world is so much indebted for his two volumes of Statical Essays, and his communications to the Philosophical Transactions, has not unaptly called the human calculus an *animal tartar*, and has

compared it to the tartar in wine, which, for contradistinction, he denominates *vegetable tartar*, for the following reasons:—One half of the urinary calculus is known to consist of air, and this celebrated experimentalist found such a quantity of it in the tartar of Rhenish wine, that it amounted to one-third of the weight of the tartar. The air extricated from one and the other loses more of its elasticity, in a few days, than such air expelled from other bodies treated in the same manner. A biliary stone, in the space of seven days, was dissolved in a lixivium of salt of tartar, in which also Rhenish tartar dissolves. But stones of the kidneys and bladder will not so dissolve in this menstruum. The human calculus dissolves in spirit of nitre; so does tartar. Both these are dissolved in oil of tartar, but far more slowly. “Moreover (observes this divine and philosopher), tartar owes its origin to the most transparent pure wine—the human calculus to limpid healthy urine.” The resemblance is further carried on, by his observing that “Tartar is generated on the sides and in every point of the surface of wine; the same holds true of the stone. Tartar is produced by a kind of orbicular incrustation, and the surface of it next the liquor is rough, that adjoining to the cask smooth; it is the same also with the stone. Tartar is brittle, though it originally flowed in the clearest wine, and weighs far less than stones and flints; the same holds good in

regard to the human calculus. Tartar cannot be again dissolved in wine: thus, also, of the human stone, though it originally flowed in the urine in a dissolved state, yet, once concreted, it will not again dissolve in urine."

§ VIII.—HOW FAR THE STONE MAY BE HEREDITARY.

From the early age at which numerous children have been attacked with these disorders, and from their having been known to afflict particular families, the stone has been considered, by many, as hereditary. It may easily be imagined that those in whom the elementary principles of the stone, always dispersed through the urine, are observed speedily to unite and form nephritic nuclei, will be more subject to the evil of this disease than others; but whether this ill can be charged upon embryonism is a point not so easily ascertained. In no one instance can we trace back the precise moment of the first formation of stone. Frequently an abundance of fine sand is found on the clouts of infants, which, from the care of the nurses, and their unimpeachable character for cleanliness, left no room to doubt of its having been voided with the urine. This has not happened to the children of poor persons only, who might be thought sometimes to suffer from neglect, but to those of people of condition and discernment; so

that there could be no reason to suspect the sand to proceed from any other source than the urine of the children, nor could there be time for it to separate after evacuation. But the fact of the fœtus in the mother's womb being not exempt from the stone, puts the former observation out of all ground of question. Loeske, in his *Observat. Anatom. Chirurgico Medic.* p. 39, informs us that a calculus, equal in size to a large pea, was found in the pelvis of the kidney of a new-born infant !

These facts, however, do neither weaken nor substantiate the partial belief that this disorder is hereditary. They leave us still in very considerable difficulty, because, while on the one hand, when the disease has happened to children whose parents (or one or other of them) may have complained of gravelly disorders ; they furnished some writers with occasion to insist upon it that what they were pleased to call the *terrene indoles*, was communicated hereditarily to the offspring ; so, on the other, the same circumstances have much oftener happened to infants whose parents were never known to be troubled with any such disorder. It is not, however, pretended to deny that any disorder, or morbid influence whatever, even though accidentally acquired, may not be communicated through the mother, from the male parent, or from herself, and be made to descend to the offspring conceived at the time of such prevailing distemper. As far.

indeed, as a similarity of construction, or a consanguineous organization, of the renal glands disposing to concretions of this kind may be supposed heritable, so far may the doctrine of *hereditary stone* or *gravel* be countenanced. Nothing, however, has occurred in the practice of the author to allow him to affirm or deny it.

§ IX.—ON THE BELIEF OF THE INSOLUBILITY OF THE STONE.

In medicine, as in physics in general, facts are preferable to, and have more weight than, any reasoning. Under the universally received name *stone* (certainly not properly applied to the human calculus), the impression made on the understanding, even of considerate people, is too strong, as it disposes the mind to give too little faith to the power of any remedy taken in by the mouth, however judiciously adopted for dissolving it. What is there preposterous in the idea of detaching or destroying one, at least, of its component parts, when the nature and effects of many medicines on the urine are considered, as before observed?

Do not persons under the *diabetes mellitus* void urine for weeks, nay months, so strongly impregnated and charged with a saccharine substance, as that a drachm and a half, and even more, of actual sugar has been daily obtained from the urine, patients under that malady have made with such pro-

fusion? If it be argued also, that the *osseous* part of the calculus is not easily to be acted upon, it may be observed on that remark, that numerous have been the instances where the bones of persons have become softened, to such a degree, from disorder, as totally to lose their stability; in fact, to be little more substantial than a *firm jelly*! Is there any thing visionary in the endeavour to operate that by medicine which is brought about through an unforced deviation from the course of nature? Nothing can be much easier than to direct the operation of such medicines to the urinary passages chiefly, or even *only*, by the intervention and aid of *diuretics*. We see more complex, more apparently unattainable effects brought about every day by the improvements in the joint sciences of mathematics and hydrostatics, under the machinery of the steam-engine. By means of the united observations of a few sedulously scientific persons, on what might be brought about under their own eyes, and then unitedly applying their faculties, aided by apparatus or machinery for philosophical experiments, in the way not difficult to be pointed out, it is impossible to say what may not be effected. When the whole power of the intellect of a man, or that of a number of men, is detached from the variety of objects which ordinarily engage and occupy it, and is employed on or directed to one pursuit alone; it is the ignorant only who can be surprised at any thing

which knowledge and diligence, so ardently applied, may produce. It is the dispersion of the power of the mind which prevents it from producing wonders every day. The division of labour and study improves every thing to which their united power is directed. How, otherwise, do oculists perform their operations and exercise their talents with so much advantage to the suffering, but by applying themselves wholly to that one branch of the profession? Renewed operations and frequent repetitions bring after them ready judgment and increased facility.

§ X.—ON THE SUDDEN ATTACK OF STONE.

Many persons have been suddenly seized with the painful symptoms of a stone in the bladder with little or no previous indication of their being liable to the complaint. This is to be accounted for from the before-mentioned comparatively less sensibility of the kidney in which the calculus might have been first formed, and from the facility of the stone passing through one of the ureters from its convenient shape or favourably smooth surface. Arrived, however, in the bladder, the saburra it takes up may give it an unevenness in its outward lamina, or the stone may make its way to the narrow part or sphincter of the bladder, where, being embraced on all sides by that sensitive organ, it may, as it were, all at once make the sufferer, for the first time, sensible of his

danger. Something like this must have occasioned Helmont to entertain a belief that a large stone might be formed in a moment by a certain petrifying spirit. He might be the more inclined to this opinion, too, from having before been apprised that alkaline volatile spirit of urine instantly formed a coagulum if mixed with pure alcohol. This is the coagulum which, after the above chemist, is called *Offa Helmontica*.

§ XI.—THE STONE IN THE KIDNEYS.

There is little to distinguish the existence of the stone, in either or in both kidneys, from that of mere gravel being lodged in them, but from the probably longer duration of the disorder, and the certainly greater uneasiness in the part affected. A sense of coldness about the region of the disordered kidney is the most leading symptom of an absolute distention or compression of the renal blood vessels. It has already been observed, that the pelvis of either kidney may be wholly filled with sand or stone, and yet the functions of life continue to be carried on.

Eustachius saw an oblong renal stone, perforated in the middle, which, from that circumstance, did not prevent the free descent of the urine into the bladder. This patient's physicians were induced to affirm positively that he had not the stone, because he never had been afflicted with a suppres-

sion of urine; neither had the urine, at any time, appeared thin and pale coloured, turbid, or full of gravelly particles. But such reasoning only shews the imperfect state of the practice of physic at that time. It is now well known, that one kidney will perform the whole office of secreting the urine from the blood, and that one ureter is sufficient to convey it into the bladder for final expulsion.

There is scarcely an organ of the whole human frame which more silently suffers the ravages of disease. Upon the dissection of a publican in the parish of St. James's, at the theatre of the late Mr. John Hunter, whose disorder was of that ambiguous kind, which had baffled all medical attempts to relieve it, the left kidney was found to have been eroded or wasted away, nothing scarcely being left but the mere cortical part of it. It contained about a tea spoonful of dark-coloured sand, and one piece of calculus, about nine grains in weight, which could, with difficulty, be considered as the whole cause of so much mischief; perhaps the effect of a prior disease. His complaints could be traced back so far as eight years, at which period he had been thrown out of a one horse chaise, and was supposed to have received an injury from the violent concussion.

Baglivi, in his *Op. Omn.*, p. 118, relates the case of a man, twenty-eight years of age, who, for only ten months previously to his

death, had laboured under a pain in his breast, which occasioned a difficulty of breathing, a vomiting that returned at intervals, and a sense of weight in his belly : after his decease, the causes of most of these symptoms were made manifest; though, as he had never voided sand or gravel in his urine, had never complained of any nephritic pains, and had never been attacked with a suppression of urine, the true source of his sufferings had not been guessed at. Nevertheless, the right kidney is described as preternaturally large, and so cartilaginous that it could scarcely be cut through; it contained a stone of six ounces weight, that consisted of concentric laminae, which filled the whole cavity of the pelvis: its inferior extremity protruded into the ureter, and branched out into an irregular form. The whole substance of this stone was a heap of nephritic sand contained in a bony shell, in colour resembling coral (no doubt tinged by blood). The entire substance of the left kidney was wasted away; and, in its place, were little hydatids filled with an acrid fluid.

§ XII.—THE MEANS HITHERTO USED TO CURE THE STONE.

There is no doubt but the disorder we are treating of had its origin with our first fathers, since no climate nor manner of living can grant us an immunity from it. As soon, therefore, as its nature became in part

known, by means of that prying and restless curiosity ingrafted in man, it was looked upon as preternatural, and arising from some extraneous substance having found its way into the body. This opinion was seemingly corroborated from there having been found foreign substances in the heart of trees, stones, shells, &c., so that without considering fully the nature of its composition and accretion, expedients were formed for relieving the unhappy creatures afflicted therewith. Pharmacy was but little known in those days; surgery and operations were the chief resources, these being of very early date. We have, nevertheless, no account of the operation for the stone till the time of Celsus, though it is more than probable lithotomy was performed long before.

However imperfect his method might be, it was pursued till after the time of Johannes de Romanis, when, no doubt, the ill success and fatal consequences attending it suggested the idea of improvement.

That scarcely one in twenty escaped the operation is evident, from the forms and ceremonies observed before the knife was applied; indicating that the miserable victim was considered as devoted to death. The work was, therefore, only justified upon this ground, that the patient's torments were worse than death; for, in those days, the patient probably derived no consolation from palliative remedies. As the mind of man became more and more enlarged and

expanded, every means were devised for lessening the fatality of the operation, and new instruments and new methods of using them were invented, till, by the several improvements and the dexterity of the operators, it was brought to its present degree of perfection.

Now, though this was the real case, and that some survived the knife, yet many patients were rejected as improper subjects for submission to it, since a due age, habit, &c. were requisite to derive any hope of success. Humanity, therefore, dictated the necessity of seeking relief in medicine for those who were by no means likely to meet with it from the instrument; accordingly we find chemists and philosophers at work in analysing the human calculus. In its decomposition it was readily found to yield a considerable quantity of fixed air, which, from the result of some of their experiments, was deemed the principal cement of the stone. On this account, lime-water being judged best calculated to deprive it of that part of its composition, was, in consequence, recommended by the first and ablest physicians. Soap, also, as an universal dissolver of animal substances, was called in aid, and, by some, was prescribed and taken with lime-water, but with what success the following instances will demonstrate.

The two annexed cases, quoted by an eminent physician, in favour of their operation and effects, will leave the reader to

form his own opinion of their efficacy from the consequences produced.

It may be urged that, granting these cases do not convey any very favourable idea of the power of these medicines, yet that they are instances of their not being so noxious to the constitution as they are reported to be: to which it may be answered, that the constitutions of men differ very materially; to some may be administered drastic medicines without injury, while the lives of others would be endangered by them.

That soap is a destroyer of animal substance is evident from the bloated, sallow countenance; offensive, cadaverous smell of the breath, and bad digestion of those who are under a course of it; and, from the history of the plague of London, as soap-boilers, washer-women, and all those who had commerce with soap, were found to die sooner, and with more visible marks of putridity than others. With them all alexipharmics and antiputrescents were thrown away, none of them scarcely escaping. Every trial shews that soap has this destructive tendency, and that it breaks down the *crasis* of the blood; for which reason it is absolutely forbidden in all diseases tending to putridity. To demonstrate this more sufficiently, let a piece of flesh, such as beef or mutton (ever so newly killed), be immersed or suspended by a thread in a bottle half full of water, in which a small quantity of soap has been dissolved, and the bot-

tle placed in a warm situation ; in fifteen hours, or, if the weather be hot, in less time, it will begin to throw up air bubbles ; and, in fifteen hours more, will emit a putrid stench, and bear all the marks of approaching corruption : if the mixture be kept by the thermometer, of the heat of the blood, the corruption will take place much sooner.

It is not uncommon to meet with a person who has taken soap a long time ; but as the cases of persons in a conspicuous situation of life are wont to make a greater impression on the minds of the public than those of others, the two following of that description are selected from among many others.

The Effects of Soap and Lime-Water in the Case of
HORACE WALPOLE, Esq. afterwards Lord WAL-
POLE.

His lordship was taken suddenly ill when at Hampton Court. His case being by his physicians mistaken at first for the cholic, he was treated accordingly ; but in a little time a stone was observed to pass through the left ureter into the bladder, which, for the present, afforded him perfect ease. Some time after, by turpentine clysters, and internal lubricating medicines, the calculus was evacuated through the urethra, being about the size of a barley-corn. He was afterwards frequently troubled with gravelly complaints, for which he took cream of tartar whey, and

great quantities of mucilages, which, though they kept him tolerably easy for two years, were found, nevertheless, to increase the accumulation of stone; for at the end of that period, being in the house of a friend, he had a sudden and urgent inclination to make water, when he was greatly surprised to find that the bason contained a pint of almost clear blood, made with the greatest pain he had ever felt. This convinced him of the inefficacy of his former regimen, and he resolved to be sounded; when, the stone being found, he was immediately put under a course of soap. Accordingly (July 1748) he began, and took an ounce of it every day, with three pints of lime-water, which he continued to do till the beginning of the year 1757; from which it appears, that his lordship took no less than one hundred and eighty pounds weight of soap, and twelve hundred gallons of lime-water! a quantity so prodigious as might stagger the faith of any one, if not authenticated by his own hand-writing, and further corroborated by the testimony of Sir John Pringle, Bart. F.R.S., in the Philosophical Transactions.

With what little success his lordship took these nauseating medicines for so long a time may be learned from the continuation of his case. It may reasonably be presumed, that his lordship could not have been prevailed upon to continue in that disagreeable course if he had not believed these medicines were the only ones which could be useful to him, and if he had not been flattered to the

last with hopes of a cure. It is from this we find that he was elated with joy whenever he could bear the motion of his own carriage, which, however, he could do but very seldom, although that carriage was of the easiest construction. He was obliged to have a litter made for the purpose of carrying him to town from his seat at Wolterton, which journey took him up five days, though but of one hundred miles. He was all this time debarred the use of his ordinary food, and every other enjoyment of life, in order to assist as much as possible the power of the medicines. He died, however, in that year. Mr. Ranby and Mr. Hawkins were present at the opening of his lordship, and found in his bladder *three* stones; two were about the size of a Spanish nut-kernel—the third smaller, which seemed to be a part broken off one end of the largest stone: they were described to be smooth, and of a polish as fine as a boy's marble.

Although the above case was looked upon as favourable to the effect of soap, yet the reader will agree with me, that there was but little reason to suppose the stones were wasting, as there was no discharge of sand nor fragments of stone; and although his lordship might have intervals of ease, it was nothing more than could be expected from his low, temperate diet, and abstaining from exercise; besides it must appear strange, that the stones should have been of such a size at his death, since he began to take the soap and lime-water so soon after he found any symp-

toms of the disease. It cannot with the least colour of reason, be supposed that the accumulation could have reached so far before taking the soap and lime-water, without his lordship being apprised of it by some leading symptoms; whence it follows, that, in spite of the enormous quantity of those reputed lithontriptics taken, the stones continued to augment.

It was remarked by those who advised his lordship to take the soap, &c. that the smoothness of the stones' surfaces must have been occasioned by the effect of the medicine; this, however, is not probable: with more propriety might that circumstance have been imputed to the friction of the stones against each other, which we know will produce the like effect.

Although the above will, without doubt, be sufficient to convince the reader of the inefficacy of soap and lime-water in the stone, yet as the case of Mr. Hay is still more remarkable, from his having taken it in larger doses, I cannot omit quoting it; nor must I forget to mention, that the very writer of it had then an opinion of soap and lime-water as lithontriptics.

In the following case mention will be made of a Mrs. Stevens's medicine; it therefore cannot be thought improper in this place to acquaint the reader how it came to be so much known.

That the world in general thought a discovery for the cure of the stone of th

highest importance to mankind, is evinced, in the Parliament's voting Mrs. Stevens, in the year 1739, 5000*l.* for disclosing the preparation of her medicines against this formidable disease. It was done, however, in consequence of her petition to the House of Commons for that purpose.

But, although the virtue of the ingredients of which these medicines were composed should be such as would justify the account given of them, yet the manner of taking them, in quantities so large as almost to fill the stomach, together with the regimen to be observed in their administration, were such as forbid the general use of them, very few persons being able to take them, from their prodigious nauseating quality; and many of those who did take them indicated the utmost reluctance.

The Case of WILLIAM HAY, Esq. being an Extract of a Letter from Dr. RUSSEL, of Brighthelmstone, to HENRY PELHAM, Esq.

November 25th, 1755.

Mr. Hay took three ounces of Mrs. Stevens's medicine in a solid form every day for five years, never leaving it off, except for a few days, to observe the effect of the omission.

About five years ago he left off the use of these medicines, and afterwards pursued, with the same constancy, castile soap and lime-water, mixed with milk. At first he took three ounces every day; but about two

years before his death he reduced the quantity to one ounce. Under this method he grew so easy, that riding in a coach, or walking, seemed to give him but little pain. This inclined him to get on horseback, which he had not done for eleven years; but he found an inconvenience from it the first time, and after the second time (which was a little before his last illness) he was heard to complain that his old distemper was as troublesome as before. He is reported to have died apoplectic, having neglected to use the necessary evacuations.

Two days after his death, Dr. Russel was desired to attend the surgeon on cutting the stone out of the bladder, the latter being empty of urine, its inner coat having grown quite callous from the stone's rubbing against it.

The stone weighed three drachms, two scruples, and eight grains; was flattish and oval, of a shining chesnut colour; the laminæ were separated by a saw, one of which was thick and friable, the other still thicker, and of a brown loam colour, as well as the stone to which they adhered, and was covered over with very rough asperities.

From this short account of Mr. Hay's case, the Doctor observed that Mrs. Stevens's medicines, or soap and lime-water, may give relief to patients, and make them pass through life easier, even although they should have little or no power to dissolve the stones: and as Mr. Hay, as well as the Bishop of Llandaff, continued to discharge

red gravel in spherical pieces, he remarked, that that gravel seemed to be what is generated in the kidneys, where, consequently, the lime-water, &c. have no power; though he thinks they will hinder the gravel, when fallen down into the bladder, from uniting or growing into a stone.

From the above declarations it appears, that the Doctor began to doubt the efficacy of those medicines in dissolving human calculi, as they certainly had the fairest trial given them in the above cases, as well as in that of the Bishop, and many others.

The diminished pain which Mr. Hay felt in the latter part of his days, does not seem to have arisen from the effects of the medicines, but rather from the bladder having become callous by the stone's friction against its sides, which consequently rendered it less susceptible of pain.

Hales tried experiments with calculi in effervescing liquors, but their results did not induce him to adopt a practice of that kind on the human body, in more than a very few instances, as the application of effervescing liquors must have been frequent, and the acid and alkaline liquors injected separately, so as that the effervescence might take place in the bladder to be of service. But both these liquors he found were too sharp to be endured by the bladder without doing it, perhaps, fatal injury; he therefore gave up the idea, though otherwise scientific.

The antients had also injected liquor into

the bladder, but, as is believed, not so much in the hope of dissolving the stone as with a view to deterge the bladder when ulcerated. For this there is an ingenious method described in the *Comment.* already quoted from vol. xvi, p. 380. In several cases, where the patient's consent was obtained, I have used an injection in both the above views, by means of a flexible catheter and India-rubber syringe, but not with that favourable result which would encourage extension of the practice without the opportunity of superintending it myself.

A gentleman, however, has, in the 23d number of the "Annals of Philosophy," for the month of November, 1814, proposed a very bold application to the calculus itself in the bladder, by an incision into it, and decomposing the stone through the power of galvanic electricity. This may certainly be considered as one of the most extraordinary, if not hazardous, experiments that has been recommended, either in surgery or medicine, for a century at least. It is set forth in the above Journal as follows :—

" Art. VIII.—On a new Solvent for all Sorts of Urinary Concretions. By Mr. C. R. Goring.

" Chemistry has been long looked up to, and, as yet, in vain, for a remedy for that excruciating disease—a stone in the bladder. It has been proposed to ascertain the composition of the calculus, and then inject its

liquid solvent ; but this method has failed of success in the application, or rather cannot be applied at all, for a thousand reasons which must be evident at first sight. It appears to me, however, that there is an agent fully capable of destroying all sorts of calculi, and, at the same time, applicable without risk to the patient ; it is that wonderful energy—galvanic electricity. This power, it would appear, is capable of being accumulated to any intensity by keeping up a proper proportion between the number and size of the plates composing the battery, and its enormous power of decomposition is well known ; it is much more than sufficient to subvert any union subsisting between the constituents of a concretion which have all been ascertained to consist either of acid, anti-acid, or generally both, with some animal matter. Now, it matters not what particular acids, &c. enter into the constitution of a concretion : as galvanism is equally a match for every one, and overpowers the strongest attraction equally with the weakest, it will infallibly drag the anti-acid to the negative, and the acid to the positive wire. The way then, I think, galvanism may be applied is this :—Let a puncture be made in the bladder with a common trochar, as usual (this, I believe, is an operation attended with no risk, and no great inconvenience). Introducing any thing into the bladder through the urethra, is a source of very great irritation to the

patient, and had better be avoided for this lesser evil.

“ Let the canula be left in the aperture ; then procure a couple of platina wires inclosed in a glass tube, but carefully insulated from each other, and projecting at the end of the tube ; the tube must slide easily in the canula, and be made of a convenient length ; the wires, of course, are to be connected with the battery : then let the patient himself (lying on his back) take the tube, and guide it through the canula to the stone at his leisure ; he will probably be able to do so better than any body else. The operation may be expected to proceed thus :—When the ends of the wires projecting come in contact with the stone, they will begin to attack it ; they will, at the same time, decompose the urine and its salts, &c. ; the watery part will be decomposed, and resolved into hydrogen and oxygen, and escape through the interval between the tube and the canula. I may mention what a fortunate thing it is, that galvanism does not produce a spark at any sensible distance between the wires ; if it did, the hazard, indeed certainty, of exploding the hydrogen and oxygen, must have precluded the use of it, as the wires must necessarily be near each other, and, when withdrawn from the canula, have come in contact with the gaseous matter escaping from the bladder.

“ It will not be amiss, now it has become so easy a matter to pour some tepid water,

from time to time, into the bladder, to afford a solvent medium for the unnatural quantity of salts found in the urine of patients with calculous complaints, and prevent further deposition and consequent increase in the size of the concretion, which might go a great way in undoing all that was done by the galvanism. Indeed, the water may, in some cases, take somewhat of a solvent part.

“Uric acid, of which calculi often consist, is slightly soluble in water, and so are some urates. The application of the galvanism must be continued till the stone is altogether dissolved, or become small enough to be evacuated through the urethra. It must necessarily be a work of some time; but if the calculus can be destroyed even in the period which it took to be formed, the patient could hardly complain; he may soon be taught to manage every thing for himself at his leisure.

“To conclude, galvanic electricity has performed many wonders already; and I cannot help thinking that, if there is a remedy, beside the knife, for a stone in the bladder, it will be found in its powers of decomposition.

“However, experiment alone must satisfy us.”

The reader would scarcely expect me to make any long remarks upon this novel idea: when any one patient has consented to put the design into practice, it will be time enough to submit a few observations

on the probability of the example being followed.

The *uva ursi*, the birch juice, the decoction of leeks, have all had their patrons and abettors; and most certainly and safely may it be said of these simples, that they are as innocent as inefficacious in operating upon the human calculus.

Of the effect of mephitic water, however, the same cannot be said; for whatever may be thought of its power on the human calculus, its effects on the viscera, and upon the lungs in particular, have been witnessed (by the author and others) to threaten the most serious consequences.

§ XIII.—OF THE MUCUS WHICH IS SOMETIMES MISTAKEN FOR PUS.

One of the pathognomonic signs (if any can strictly be so called) of the stone in the bladder, is the thick mucous heavy sediment which is often found in great quantities in the urine of calculous persons. The antient physicians attributed the origin of the stone, as we have already mentioned, to a pituitous humour exsiccated and indurated by heat. The illustrious Hervey, in his letters to Beverwyck*, maintained the same opinion, and endeavoured to support it by the observation, that this mucus, if exposed to

* Beverwyck Steenstuck, cap. iv, pages 58 and 59.

the air, would assume the appearance of some kinds of human calculi. That this viscid matter often contains calcareous matter is not to be doubted, and, consequently, if dried, may nearly resemble, in colour and quality, the lighter calculi of the human body; but it is not easy to conceive how this glutinous substance should acquire a *dry* and *hard* form in the bladder, or in any other part of the body; it being, while there, always involved in, or accompanied by, moisture. That this same viscosity, in conjunction with sabulous matter, may enter the substance of the stone, may adhere thereto, and increase its size, is reasonably enough to be conjectured, nay, to be believed. For, by macerating human calculi in warm water, their surfaces are often found clammy, or covered over with a white mucus; and that mucus no doubt becomes, to a certain extent, a convenient bed or basis for a new lamina of stone. Stack long ago observed, that a glutinous matter is contained even in flints, but in still greater quantity in animal stones. That this mucus, however is not the *cause*, but the *effect*, of the stone, the experience of every day, by those who are conversant in these disorders, must sufficiently prove. Helmont*, while inveighing against the schools of physic, makes use of these words:—
 “Non est ergo illa mucago materia calculi

* De Lithiasi, cap. ii, § 4 and 5, p. 664.

ex qua, sed lugubris hujus effectus. Atque idea malo istam mucilaginem in materiam calculi accusant." This mucus is not the matter of which the stone is formed, but one of its sad effects. And, therefore, they unjustly accuse this mucus of being the original matter of the stone.

It is, however, of importance in many respects, and especially for the patient's comfort of mind, to distinguish this natural mucus of the body, though produced in a preternatural abundance, from what surgeons and medical men denominate pus or *matter*. In the first place, it is almost always present in some degree when the bladder contains a stone; especially if such stone has attained any size, so that the sides of the bladder, when contracted, are rubbed by it. For where only a small stone, recently passed from the kidney, is lodged in the bladder, this gluten is rarely, if ever, found to be discharged in any quantity; so small a stone being scarcely able to irritate the bladder in its state of greatest contraction.

Sometimes, when the stone in the bladder is very large, or of a very rough surface, an incredible quantity of this mucus is voided with the urine, which, from its viscosity and density, does not intimately mix with the urine, but, at the instant it is discharged, falls to the bottom of the chamber-pot. From the bad smell this animal glue sometimes emits, especially in the hot weather of summer, and from the pale-coloured offen-

sive urine which swims over it, the patient has often been thought to have an ulcer in the bladder. The discharge, however, if duly considered, has none of the qualities or characteristics of *pus*. If the floating urine be first poured off, and the vessel further tilted, this gluten will not run off even in part, but the whole mass will cling together, and fall over the rim at once, like the albumen or white of an egg.

That a rugged stone may wound the bladder, or create inflammation with its consequent *suppuration*, every body must know:—But the matter discharged with the urine by an ulceration, would dissolve in, or mix with, such urine; whereas the above viscid discharge does not incorporate easily with the urine, though shaken to and fro for a considerable time.

It is well known to all who are acquainted with the structure and economy of the human body, that those parts of it, through which the urine flows, are lined with a mucus, that is intended by nature to prevent those passages from being irritated by the natural acrimony of the urine; as also, that in any inflammation of these parts, from whatsoever cause it may happen, the mucus is secreted in greater quantity; as, after taking sharp diuretics, and even after the application of cantharides externally in the way of blisters. In this last case, so violent and troublesome a strangury has been known to ensue, that, instead of urine, the patient has scarcely

voided any thing but a bloody mucus, and that with intolerable pain. Now, if such a profuse discharge of mucus, as we have been speaking of, were to be considered in the light of *purulent*, of what an extent must such an ulcer be !

It may be observed, too, that this mucus, whose colour is ashen, resembles jelly, and is almost as tenacious ; whereas pus, when mixed with urine, has more the appearance of the sediment of water-gruel.

It is, however, by no means intended to inculcate a belief that ulcers do not supervene in cases of stone, whether of the kidneys or bladder ; they do, alas ! but too frequently, and therefore deserve to be noticed.

§ XIV.—OF ULCERS IN THE KIDNEYS.

When a stone in the kidney, by means of a rapid or irregular accession of calculous particles, acquires a great size, rough surface, or angular shape, it is no wonder that the soft and parenchymous part of such organ should be compressed, inflamed, or lacerated, so as that a suppuration may ensue, and its total destruction threatened. A thorn, forced into any part of the body, is capable of producing a violent inflammation, followed by an extravasation and stagnation of such humours ; the abscess, in consequence, bursting, the matter or pus is let out. But, in such case, the offensive matter, with its cause, viz. the *thorn*, be-

ing excluded at the same time, the ulcer heals and the injury is repaired.

Cases, like the two just mentioned, are, however, not so wholly dissimilar as never to have approximated in effect to a certain degree. We read, and from very good authority too, of a case of suppuration in the kidney of a man from a pointed cutting stone, where the inflammation had communicated to the surrounding parts, the tumour pointed outwards between the muscles near the spine, and, by a small and timely incision made therein, the stone was extracted, and the patient recovered with no other inconvenience than a small sinus being formed and remaining in the part, which required dressing as long as the patient survived, which, we are told, was upwards of ten years. This, however, is a case which calls for our admiration rather than for our reasoning upon it.

Tulpius, in his "*Observ. Medic.*" liv. iv, cap. 28, p. 320, cites a remarkable case of this kind. It was of a counsellor, descended from a calculous father, who had from his childhood been subject to nephritic complaints. In this gentleman, the stone had made its exit through an abscess of the loins, but a callous ulcer remained in the part, through which the urine constantly dripped, mixed with purulent matter. Various remedies were tried, and, among others, the Spa waters and the warm baths of Aix la Chapelle, without the least benefit. But,

on the contrary, the discharge of purulent matter through the ulcer in the loins, being injudiciously stopped, the fœtid pus was thrown upon the constitution, and the patient, being seized with a violent fever, died miserably.

An ulcer in the kidney, if not to be pronounced decidedly incurable, is, nevertheless, one of those almost hopeless conditions for which little can be done medicinally with any prospect of success, but by removing effect and cause together.

The substance of the kidney is sometimes wasted away by suppurating. In this case, clots of coagulated blood, by extravasation from the ruptured vessels, are discharged with the urine. The parenchymatous part, which is not reduced to pus, is abraded by the rugged stone, and discharged in the same manner, piece by piece, under the form of little bits of flesh or skin. The cellular membrane or web of the kidney is very thin and fine; when, therefore, this comes away in the urine, it is observed to float in it like small pellicles. But it is unnecessary to dwell longer upon these ravages of a long continued or neglected disorder, or to terrify the nephritic patient more than to excite his endeavour to remove a disorder in its earliest stage, by an appropriate remedy, reminding him, at the same time, that a stone in the kidney does not, like one in the bladder, admit of extraction by the knife; for whatever may be said of the

celebrated Dr. Friend's remarks on the Arabians performing the operation of *Nephrotomy*, we believe no prudent surgeon would attempt it upon any account in these days. Should, however, a stone in the kidney cause an inflammation in the adjacent parts, and give rise to a tumour with a collection of purulent matter spreading or pointing outwardly, no harm can arise from opening such tumour, and endeavouring to extract the stone by the forceps, as may be seen in the *Memoires de l'Academie Royale de Chirurgie*, vol. ii, or in any other manner; but for a surgeon to make an incision through the sound integuments into the pelvis of the kidney to come at a stone, whose existence, at best, can never be fully ascertained, like one in the bladder; would be a practice extremely rash, and, most probably, directly fatal. If such an operation, therefore, had ever been practised by the Arabians, it is no wonder that Serapion and Avicenna condemned it as preposterous and unjustifiable. The author before quoted, however, tells us, that it was performed on a condemned malefactor, and on Consul Hobson, by Dominico Marchetti, of Padua, both of whom, as it is related, recovered.

§ XV.—TREATMENT WHEN A STONE IS IN ONE OF THE URETERS.

When a renal stone begins to be moved out of the pelvis of the kidney, and to en-

ter the ureter, the torture is sometimes so great as to overcome the most patient, resolute, or courageous. These pains must therefore be relieved by medicines, which, though they have nothing to do with the curative indications, are, nevertheless, of great use in mitigating the patient's anguish, which otherwise might exert its ravages so as to deprive him of reason and even of life. Of these, *opiates* and *emulsions* claim the first consideration ; more especially the latter. From ten to thirty drops of tincture of opium (*liquid laudanum*) in a tea-cupful of strong linseed tea, will seldom fail to do of itself every thing that can be wished for at such a moment. By sustaining nature on so trying an occasion, the medicine (repeated as the urgency may require) will often enable her, by a new and reiterated effort, to propel the offending concretion into the bladder.

CHAP. III.

§ I.—OF THE GRAVEL.

ONE of the most extraordinary circumstances attending this disorder is, that it has been known to attack persons severely who have never discovered the smallest outward signs of its approach, by the discharge

of any thing like sand in their chamber pot. Others have witnessed the almost daily incrustation of the urinal without suffering the least internal pain or inconvenience. When the disease has, however, followed this last appearance, the stone extracted has generally agreed with it in colour, &c. Van Helmont observes, that “the stone formed in our bodies, and the substance which incrusts the bottom and sides of chamber pots, are, in every respect, identically the same, and have both the same essence, cause, and properties;” and, afterwards, he adds, “every person potentially has the stone in the bladder, but *that* person only is wretched in whom the *petrescent* power, latent in the urine, is put in action within his body, by inattention to regular evacuations, or by some other mismanagement.

For the actual cause of the *gravel*, the reader is referred to a preceding chapter, which treats of the nature and cause of the gravel and stone, since both are, in fact, the same disease in different degrees, or at different periods of duration.

§ II.—OF THE SYMPTOMS OF THE GRAVEL AND STONE IN THE KIDNEYS.

The symptoms of the gravel, when in the kidneys, are various, according to the degree of violence of the disorder itself; but the most common are a dull obtuse pain in the

kidneys, or in that part of the loins where they are seated. Sometimes the pain is acute, accompanied with bloody water, which, if retained any time in the bladder, becomes of a darker or coffee colour. A nausea and vomiting will likewise be excited; sometimes a suppression of urine from spasms, induced by the irritation of the particles of gravel in the kidneys, and the pain will often extend itself along the ureters to the bladder; in which case an uneasiness is felt in the side, particularly after a full meal, or much exercise, or from any distortion of the body, riding on horseback, &c. And it is no uncommon case to find a pain even in the top of the shoulder by a nervous sympathy.

The kidneys, as well as other organical parts of the body, are subject to inflammation, resolution, and suppuration; which last, though very alarming, is not absolutely incurable, as it may sometimes be remedied by balsams that deterge and dispose to heal. Balsams of capivi, turpentine, &c. are of service here; likewise drinking freely of mucilaginous drink, as barley-water, marsh-mallow tea, and such like.

That species of rheumatism called lumbago, has been frequently mistaken for a nephritic complaint; but the former may be distinguished from the latter in this, that the patient may induce a pain by bending his body forwards, the muscles being then put on the stretch; on the contrary, if it be the

gravel, his pain will neither be increased nor diminished thereby.

§ III.—OF THE SYMPTOMS OF THE GRAVEL IN THE BLADDER.

Almost the same complaints, with a little variation, will affect a person when the gravel is in the bladder. At times, a stranguary is the consequence of the stimulus of rough gravel against the sides of the bladder, which, from the fineness and number of its nervous branches, is liable to great irritation.

It is necessary to be particularly attentive to the cure of the gravel, as, by that means, the formation of a stone may be prevented.

The symptoms of gravel in the bladder are similar, throughout, as those of the stone of the same part, only in a milder degree. In the latter case, indeed, the weight of the stone may often be felt, particularly in turning in bed; as, also, that too much exercise in walking, or otherwise, seldom fails to produce bloody or discoloured urine.

§ IV.—OF THE CURE OF THE GRAVEL IN BOTH BLADDER AND KIDNEYS.

Since (as has been already shewn) the gravel and stone are not only produced by the same cause, but are, in fact, the same disease, in different stages or degrees, the cure of the former must of course be much in-

involved in that of the latter; with this difference, however, that in the gravel we may venture to give diuretics and stimulants, which we cannot with safety administer in the stone, inasmuch as all stimulants do mischief where the calculus is too large to be expelled. Every one's reason must inform him, that if the concretion, in such a state, be impelled forward in the vessel which contains it, the consequence must be a laceration in the part, and, perhaps, a subsequent ulcer, or dangerous hæmorrhage of blood.

This circumstance happened to a gentleman in Portland Street, to whom I was called a short time before he died. As he had been incapable of answering questions, from the loss of blood, it was requested, upon his death, that he might be opened; when it appeared, that a rugged stone, about four grains in weight, had lacerated the left ureter, and brought on the hæmorrhage which had proved fatal: for when it had insinuated itself into the ureter, it became a continued *stimulus*, and induced such twitches and contractions in the part as finally brought on convulsion and dissolution.

Nearly the same circumstances happened to Mr. Smith, coach-maker, of Dartford, and who unexpectedly died at the house of Mr. Chapple, bookseller, in Pall Mall, while on a visit, in the spring of the year 1811. He had long suffered under the disorder of stone in the kidneys, and had been frequently at-

tacked with profuse bleeding after much exercise: he had come to town in order to make trial of my medicine, to which he had been strongly recommended, when the fatal accident occurred which terminated his existence.

A case, in some respects similar to the foregoing, occurred to a private soldier in the East Middlesex regiment, to which I was surgeon: he made slight complaints of the gravel at times, but had never neglected his duty on that account. Being at exercise on a field-day, and in the act of grounding his firelock, he was sensible of something slipping into his right ureter, and upon his rising again in taking up his musket, the sudden jerk of his body in that motion gave him the most poignant agony: he fell out of the rank, and was carried to the hospital, where he passed nearly three pints of almost pure blood; he continued to make discoloured, or coffee water, for many days afterwards; and as he was of a bad habit of body, the wound degenerated into an ulcer, and killed him, in spite of every medicine, and even though the stone which occasioned the mischief had been voided.

Diuretics are, nevertheless, serviceable in the simple state of the gravel, when the bladder, by its laxity and inertness, has suffered the urine to separate and deposit its earthy part therein, in the form of sand. The common diuretics of the shops, and such as have been most frequently used in

the gravel, are the *spiritus ætheri nitrosum*, *kali acetatum*, and all *terebinthinate præparations*.

Of the utility of strong diuretics in such cases, many eminent practitioners have had their doubts; for if the stone fixed in the ureter entirely fills up the passage, and thus prevents any urine from passing by, then the part of the ureter that is above the obstacle is distended, and the stone pressed on by the column of incumbent urine, in proportion to its height. The weight of the urine may, therefore, be expected to produce a more natural and happy effect than any accelerated motion we can hope to communicate to it by sharp diuretics. We know very little of the supposed impetus which we are wont to imagine is communicated to the urine by means of diuretic medicines. They may, and no doubt in such a case would, do harm by a great stimulus, and by further irritating the pained or inflamed parts, since we know they render the urine additionally acrimonious. Sydenham justly observes, "If the stone in the kidneys be too large to be forced through the ureters into the bladder, these mineral waters (diuretics) generally cause a fit, which continues, not without endangering the life of the patient, till the stone gets back again into the pelvis of the kidney."

Although the symptoms of the gravel are different according to the seat of the disease,

yet the cure may be undertaken in the same way, whether in the kidneys or bladder.

Notwithstanding bloody urine is ranked among the symptoms of the gravel in the kidneys, yet it is always to be doubted whether it be not rather the consequence of a stone; in which case, it is prudent to avoid stimulating diuretics or forcing medicines; for although such symptom may oftentimes be produced by loose gravel, yet, nine times in ten, it is to be suspected as arising from stone. Sometimes, indeed, the symptoms, whether of stone or gravel in the kidneys, run so much into each other, that it requires great attention to discriminate them. It is a consolation, however, to the afflicted in those cases to know, that the medicine which can cure the stone must be equally efficacious in expelling the gravel.

The regimen to be observed in the gravel, whether in the kidneys or bladder, should be adapted to the urgency of the complaints. A cooling diet is always proper; and if the urine be hot and high coloured, plentiful draughts of balsamic liquors must be taken; such as veal broth, barley water, marsh-mallow tea, syrup of capillaire, or orgeat. It will also be necessary to attend minutely to the sediment in the urine, whether it be of an earthy or slimy kind: if of the latter, it indicates great irritation; consequently violent motion should be avoided.

Let it be observed, that exercise is always

to be recommended where the gravel is evacuated without pain ; but if irritations, discoloured water, or pain, attend the discharge, a quiescent state is to be preferred, and the body kept cool.

CHAP. IV.

§ I.—ON A REAL CURE FOR THE STONE BY A SPECIFIC SOLVENT.

THOSE who have so peremptorily asserted the stone incurable, can have but little reflected on its constituent principles. They must have looked upon it as of one uncompounded nature, immutable as its primary particles ; yet they agree, that it is possible to prevent the urine from running into further concretions, which is, in fact, contradicting themselves, and allowing it curable, though in a slow degree.

To admit that a medicine should prevent the urine from giving out those principles which form a stone, and yet not act upon the stone itself, is not intelligible to me ; however, if a medicine shall, as an eminent physician observes, by destroying the petrifying quality of the urine, hinder any calculus from deriving new accretions, that calculus must necessarily, in time, have its surface washed down and worn away by

the flux and attrition of the urine (now rendered more simple), and the coats of the bladder acting upon it on all its sides ;

Quid magis est saxo durum ? quid mollius unda ?
Dura tamen molli saxa cavantur aqua.

OVID.

The primary particles of earth, so often mentioned as attracting each other in the formation of a stone, never fail to take up certain other relative principles as a *medium*, not only to assist in their junction and cohesion, but as necessary to fill up the interstices occasioned by the apposition of those irregular figured particles ; without which medium they certainly could not *form* a concrete substance in any degree so tenacious. Now, if a medicine be adopted, which, by its affinity with any one principle of the stone, deprives the stone of that principle, will it not, in part, destroy the tenacity of that stone, and render it liable to fall into powder, or moulder away by the common attrition of the urine ? And is not that medicine as perfect a dissolver of the stone as *aqua fortis*, or *Glauber's* spirits of nitre, now called *acidum nitrosum*, since these do no more than destroy the tenacity of it, without changing the nature of its component primary atoms ?

That there is a *specific property* in several fluids no sensible medical professor will deny. It is what has been always understood to embrace the term *affinity*, and is

manifested in the simple act of dissolving a lump of sugar, the most natural menstruum of which is water; for, if brandy or alcohol (though so strong in comparison with water) be substituted for the water, the sugar will not so readily be dissolved in it. Again, resins are soluble in alcohol, but not in water; and so on of many other specific *menstrua*, well known to those who are in the least acquainted with that part of chemistry which relates to the doctrine and laws of affinity and absorption.

That there is also a property in some medicines of operating locally, or, as it were, electively on part of the body, or on one of the fluids of the body, without affecting the whole, the greatest caviller must allow; and every day's experience furnishes facts for its confirmation—witness, the effects of cantharides and mercury, of which mention has been made heretofore.

It being allowed, then, that there is a *specific* power in several medicines, it only remains to shew how far such operation takes place in the administration of the Solvent about to be spoken of, so as to answer the end of disuniting the principles of the stone, and thereby relieving the sufferer from a cruel disease.

The chemical elements or principles, to which all bodies may be reduced, are chiefly *Water* or *Phlegm*—*Air*, which escapes unseen in great quantities from all, so as to constitute half the substance of some of

them—*Oil—Salt*, which is either *volatile* or *fixed*—and *Earth*.

The natural elements being thus blended together in the formation of a body endued with tenacity, of what consequence is it whether, in order to decompose and destroy its adhesion, we deprive it of either the water, or air, the oil, or the salt? since it will be disunited in an equal degree by excluding from it any one of its principles or elements.

Although it has been said that *earth* may be converted into *air*, conformable to a learned natural philosopher's experiments, yet, no doubt, by that will be understood, that the earth is resolvable into its primary particles, which primary particles may be, and in fact are, light enough to be borne up by the air.

That this is the case is demonstrable, by a chemical process, where a quantity of earth may be collected from the air; but although, by the help of chemistry, we can resolve bodies into their pristine constituent principles, nature has here put a *ne plus ultra* upon our labour and curiosity; otherwise, were we able to alter or annihilate the first principles of bodies, we might create great confusion in the order of things.

It should therefore seem plain, that although, in the strict philosophical sense of the word, there is not in nature a dissolvent, yet whatever decomposes the constituent parts of a solid body, or resolves it into its

primary particles or atoms, has a right to that title, according to the acceptation of the word. Salt is not only a predominating principle of the stone; it is also the cement of other compositions, as glass, mortar, &c. Now we all know, that if the lime with which mortar is made, were to be deprived of its salt, it would no longer be fit for the purposes of building; for although it should be mixed with sand, and tempered as in the usual way, it could never become firm, but continue a *calx*, which, if used to build with, would expose the work to sudden decay. The adhesive property may nevertheless be given to it again by the addition of a *fixed* salt—hence the reason why mortar made with sea-water is more durable than any other.

That the specific Solvent in question operates upon the salt which, in part, composes the human calculus, is certain, and probably upon more than one of the principles of the stone, from the hasty solution of some stones by its use. Indeed, the diversity in the quantity and proportion of the several principles which compose the stone, will be a cause of its varying in its operation.

*A TABLE, shewing the Proportion in which several
Wines and Juices of Fruit reduce the Power of the
Solvent upon the human Calculus.*

The standard in the following experiments was that of one part Solvent, and three parts simple water, this being the most natural vehicle for its operation.

The mixture, with its antagonist, for examination, were kept in a regular and nearly a blood heat, by the thermometer, for twenty-four hours. The result of these experiments, therefore, points out which of these articles ought to be more abstained from than the rest.

The power of the standard mixture on a piece of calculus of four scruples weight was, for a scale of comparison, marked at the degree of	40
With the same quantity of juice of ripe melon, in the same ratio, it was reduced to only	31
With pine-apple juice	27
With that of peaches, apricots, and nectarines	25
With mulberry juice	24
With that of codlins	22
With bottled styre cider	21
With red gooseberry juice	18
With red currant ditto	17

Wines reduced the Solvent as follows :

With madeira	28
With mountain and frontiniac	29
Old burgundy and claret	27
Old red port	26
Vin de grave, lisbon, malaga, <i>nearly</i>	25
A light florence wine	24

From the foregoing table we see the difference is very trifling with regard to the several wines, only it behoves one to be careful that they have a certain body, good age, and free from tartar, otherwise they are more susceptible of fermentation in the stomach.

The same caution is equally necessary, if not more so, in respect to malt liquors, which ought to be neither fermentative nor sour. Indeed, all acescents should be avoided as much as possible during a course of the Solvent, as tending to diminish its power and efficacy.

§ II.—ADDITIONAL OBSERVATIONS ON THE SPECIFIC QUALITY OF SOME MEDICINES.

Several eminent experimentalists and writers upon this important disorder have declared, that whatever medicine should be found to be most effectual in removing it, must operate by a *specific* quality on the urine. Dr. Gregory has clearly described a specific elective quality in the office of the lymphatics. For instance, the chyle of a sheep was turned blue by indigo being thrown into the intestine of that animal; and yet indigo is not soluble in water. Nevertheless, galls and green vitriol are rejected by the lymphatics, for the chyle is unimpregnated by either from the intestines; as the experiment of “Fordyce on Digestion,” page 121, proves. The local or specific effect of turpentine, Spanish flies, aspa-

ragus, &c. on the urine, has been spoken of already more than once, in countenance of the above opinion; to which may be added the fact, that when lime-water is poured on urine, a very sharp volatile vapour instantly exhales from it; but lime-water poured on blood occasions no such exhalation, nor is it noticed to produce any other effect than to heighten its red colour. All this is accounted for by the far greater quantity of salts the urine contains above all other animal fluids; and those, indeed, much more acrid than are to be observed in the blood or serum. On this ground, then, have the most profound theorists built their hopes, that a specific menstruum might be found to disunite the parts of the human calculus, by increasing the activity and soluble powers of such salts, after their separation from the blood with the urine, as they could never possess while circulating in the mass, where the very globules of the blood might retain them in an inert condition. A successful medical impregnation of these salts, so as that they may operate upon the calculus as soon as they have passed the emulgents of the kidneys, seems all that is wanting to satisfy the calls of humanity on this topic. It is hoped, the time is fast approaching when no operator will voluntarily cut a person for the stone till a trial has been made of a solvent or lithontriptic. The celebrated Moraude, as may be seen in his address to the *Academie des Sciences*, advises every sufferer to try some

such medicine before he submits to the operation. The argument often made use of for proceeding to so grave a measure, that "the stone is too large to be dissolved by any medicine," is not tenable, if duly examined, because, if the stone be so *large*, the operation is proportionably dangerous. But, to return to the subject of a specific or elective quality in the medicine administered for curing the disorder of stone.

Helmont particularly directs the researches of the physician towards the above object, and, after excellently describing the qualities of a remedy fit to dissolve a stone, and cautioning against too much confidence in the corrugating qualities of medicines, instances the example of ostriches digesting iron; and smaller birds, stones, pearls, and even flints; not by the rival or hostile quality of corrosion, but by a simple and mild power of insinuating themselves into obstructions, and by that dissolving tartareous concretions. This is the quality he advises to meditate on and to imitate. His words are, "Non enim struthio ferrum, aut aviculæ silices, uniones, lapillos, corrosivæ qualitate æmula conterunt. Virtus est solvendi repagula, obices que tartareos. Hanc meditari, hanc imitari, convenit."

Now, that such a property is to be found in medicine, we have numerous instances; and how far success has resulted from the author's endeavours hitherto to discover and adopt it, on this great occasion, the following cases may serve to illustrate.

CASES
OF
CURE OF THE STONE AND GRAVEL.
BY THE
Specific Solvent.

IT is now time to hasten to the most important part of this interesting subject, on which the hopes of the sufferer, under this severe malady, must be founded. There are many persons, as well medical as others, who are induced to discourage the taking any medicine in the view of dissolving or disuniting the parts of the stone, through the plausible pretext that, although they may be operative on the stone, yet that they must be equally so on the several parts of the body through which such medicines are conveyed, and, consequently, that they are liable to become injurious (though imperceptibly so) to those vital parts. If this objection had not been duly anticipated, and successfully obviated, in the preceding part of this work, treating on the *elective* and *specific* operation of numerous medicines (and without such qualities could be found and relied on in the healing art), the practice of physic would be at a very low ebb indeed. But ought the fear of silent and imperceptible ill to hinder the attempt to remove an

obvious and a daily increasing one? and must the hazard of the knife be the only one incurred?

With respect to the salubrity of the favoured remedy, it can be solemnly affirmed (and so many years' trial may be supposed to sanctify the affirmation), that in the most delicate constitution it might be administered without the smallest danger of injuring the *primæ viæ*, viscera, or any other part of the body. The only temporary inconvenience ever known to arise from administering it, is, the costiveness it will sometimes occasion, during the first two or three weeks of taking it; or, if not sufficiently diluted, a little tenderness in the mouth or throat for a short time; but which a spoonful more of the water, tea, gruel, or whatever other vehicle it may be taken in, added to the dose, never fails to prevent a recurrence of.

The following cases of cures effected by the Solvent are selected from numberless others, either for their variety or for the distinction of the persons on whom they were performed; and the author has no fear of being thought prolix or unnecessarily diffuse, since each case is a sort of comment on the operation of the medicine, and will throw some additional light on the disease itself. They altogether render any encomium on the remedy unnecessary; for it must be allowed, that no instance can be given of any discovery being more respectably distinguished, as well in testimony as in reputation.

CASE 1.

Of the Right Honourable Lord Viscount SACKVILLE, one of His Majesty's Principal Secretaries of State.

I was desired to meet Doctor Sir John Elliott at Lord Sackville's, to consult upon his lordship's case, which I found had been treated as a laxity in the kidney, and which was supposed to have given rise to a considerable extravasation of blood. Under the supposition of that being his disease, he had been prescribed balsamics and astringents; as tolu, bark, steel, &c. These medicines, although they lessened the bloody discharge, did not abate his pain; on the contrary, the disease was found to grow upon him. In a short time his sufferings increased to such a degree, that his lordship was obliged to take upwards of one hundred drops of laudanum in a night. He informed me, that, at times, the hæmorrhage of blood had been so great, as to threaten the most alarming consequences. It may be supposed, that his lordship had consulted the most eminent surgeons, as well as physicians, upon his condition, which had not been suspected to be the stone, because he had never been sensible of having passed sand or earthy matter in the urine at any period of his life. After he had, in the most accurate manner, related the progress of the disorder, I did not long hesitate to pronounce it the stone, and recommended the immediate use of the Solvent. His lordship began it that day with the greatest readiness, particularly as he had been strongly prepossessed in its favour, from the accounts he had heard of its effects from a friend of his nephew, the Duke of Dorset. I waited upon his lordship the next day, when he told me, that the Solvent agreed perfectly well with him, and was not disagreeable to his taste. In ten days I found his urine began to assume a better colour, and the violent pain about the region of the loins, in some measure, decreased. I attended his lordship at the distance of every two or three days, until I had the pleasure to find he was greatly mended in health. I had also the further satisfaction to discover a discharge of sabulous matter in the urinal, for the first time, which removed every doubt as to the nature of his disorder. This, in about a month after, was farther cleared up by the evacuation of a piece of stone, which was exceedingly hard within, and had all the evident marks of having been acted upon by the Solvent. By this time (which was the fifth month of his taking the Solvent), the bloody water had entirely ceased to come away, and only the slightest tinge was observed in it upon any extraordinary occasion or fatigue. His lordship continued to take the Solvent regularly, till it was concluded the calculous concretions were

entirely brought off; but he had suffered so much from the disease, that he chose, nevertheless, to continue taking the medicine in smaller doses, although the necessity of it was no longer enforced. This caution he observed ever after, taking three or four bottles a year for the eight succeeding years, during which time (and ever after), he not only kept off the stone, but declared he had enjoyed as good health as at any time of his life: his lordship's case is therefore a happy testimony, not only of the power of the Solvent in removing the stone when present, but also of its preventing the return of the disorder, and generally amending the state of health.

The benevolence of his lordship prompted him to desire that his case might be published, for the benefit of those who may unfortunately suffer under this severest of diseases.

Lord Sackville made a point of carrying a little package of bottles of the medicine with him to his seat at *Stonelands*, in Sussex, every summer; where, in the neighbourhood, he distributed it to every needy sufferer whose case was known to him. It was through his lordship's recommendation that a relation of Colonel Holwell, at Major Yorke's, Bishop's-Down Grove, near Tunbridge Wells, was suddenly and surprisingly recovered by the Solvent, in a most dangerous biliary obstruction, by discharging nearly a tea-cupful of gall-stones in the course of four days.

The subjoined Extract of a Letter from the present Lord Sackville, in answer to a request to satisfy a timid patient of the efficacy and innocency of the Solvent, will evince the light in which the family of that nobleman view the unexpected recovery of the late head of it.

"Harley Street, Dec. 20th, 1814.

"My father was happily and surprisingly recovered from his disorder of the Stone, by Adams's Solvent, as administered by Mr. Perry, after having many years suffered the greatest pain, and tried various means of relief through the several medical gentlemen he had consulted. He remained free from that disorder, and never failed to express his gratitude for the blessing. I am, Sir,

"Your humble servant,

"SACKVILLE."

CASE II.

The Case of — ALLANBY, Esq. Receiver-General of His Majesty's Quit Rents in the Island of St. John.

MR. ALLANBY was seized with every symptom of the stone while in the island of St. John, on which account he came over

to England, in expectation that the operation would be necessary. One of the surgeons he consulted on his disorder, advised him to try the Solvent previous to any other step: he very readily acceded to the proposition, and immediately began a course of it, in which he regularly persevered, till he voided several pieces of stone, after which he evacuated a good deal of fine sand and mealy powder in his urine. In this way he continued several months, growing easier as the stone diminished in size; for, at first, he suffered such extreme pain as made him unable to walk, or even ride in a coach, except with great difficulty; his urine also, upon any exertion of the body, would be, at times, bloody; and, at others, of the colour and consistence of coffee grounds. As Mr. Allanby's intention was to have been cut for the stone when he first came over, he had not taken measures for any considerable stay in London, so that I was desired by him to represent his case professionally to His Majesty's Secretary of State, in order to obtain permission for his stay so long here as might be necessary to complete his cure. His Majesty was pleased to give him leave, and he continued incessantly to take the Solvent in the usual quantity, till the pain entirely ceased, and there was not an indication of the least part of the disorder remaining. However, he determined still to take it for a time, by way of totally expelling any loose sand that might otherwise adhere to the neck of the bladder. As he now remained perfectly well, and divested of any uneasiness whatever in the bladder or kidneys, he wished to be sounded, for satisfaction, so that he might be convinced the stone was totally dissolved; for this purpose I introduced a sound into the bladder, and scrupulously searched therein, when it appeared there was not the least cause to suspect any portion of the stone was left behind; he accordingly omitted, in part, the Solvent from that time, and, nevertheless, remained entirely well.

C A S E III.

The Case of the Rev. Mr. FOWKE MOORE, as transcribed from his Letter to the Author.

To Mr. PERRY, Surgeon, &c.

SIR,

I FLATTER myself it will be unnecessary to apologize for the trouble occasioned by this letter, which gives you an account of the success of your Solvent for the stone, &c. Inclosed, I send you the state of my case, as I had it printed in the newspapers, and which you are also at liberty to make use of as you please.

I have the pleasure to inform you, that I have had many applications to me since my cure, some from persons with whom I was entirely unacquainted, desiring to be informed of every particular, which I have not failed to answer. I have taken the utmost pains to do justice to your medicine, which is no more than my duty; and yet I am largely recompensed for any trouble that I have, in the pleasing prospect of being the means of relieving many miserable people, and, at the same time, increasing your emoluments by the sale of your truly valuable Solvent.

I hope you will take care to have this kingdom supplied with it; and I think it would be advisable to have it in several of our country towns, particularly in this northern provinces, viz. Belfast, Derry, Newry, &c. which are full of people.

I request you to pardon the liberty I take in giving you this advice unasked, as it proceeds from my fellow-feeling for my unhappy countrymen, who labour under that dreadful disorder, and from an earnest desire to be servicable to you, who have been the happy instrument, under God, of rescuing me from the jaws of death.

I should be glad to have it in my power to do you any service, for I am, with great truth and sincerity, dear sir,

Your obliged, and very humble servant,

Ireland, Dungaunon.

FOWKE MOORE.

The Advertisement.

"THE Rev. Fowke Moore, of Dungaunon, in the county of Tyrone, having been cured of a stone in the bladder by the above medicine, thinks it his duty, both in gratitude to Mr. Perry the discoverer of the medicine, and in compassion to all those who labour under that excruciating disorder, to publish his case, which is as follows:

"In the beginning of December last, he was sounded by an eminent surgeon in Dublin, who immediately found a stone of a middling size; upon which, by the advice of physicians, Mr. Moore went under a course of soap-leys, which he continued from that month to the 23d of May last, during all which time he had a most violent complaint in his bowels, and found not the smallest relief in the pain of the stone: he was so emaciated, that it gave him pain to sit without a cushion, and so weak, that he could not step into bed without assistance.

"On the 23d of May he began to take the *Solvent*, and, in a fortnight afterwards, he found a change for the better. From that time he began to discharge gravel, sand, and glutinous stuff, in great quantities, which continued for about three months, then gradually decreased. He has now no complaint of

any kind, and is convinced that the stone is entirely dissolved. He has recovered his flesh and his colour, and is able to ride a hard trotting horse five miles an hour. Any person, who is desirous to be informed of more particulars, may apply to Mr. Moore, in Dungannon."

C A S E IV.

The following Letter conveys the Case of a Lady at Trickenham, to whom the Knowledge of the Solvent was communicated by the then Lady GEORGE GERMAINE.

SIR,

I was greatly afflicted with the stone and gravel for, at least, twenty years, during which time I voided a great quantity of gravel, but no stone. I was, last June, seized with violent pains in my right hip and groin. To describe what I felt is impossible; and, till December, I never enjoyed one moment's ease, night nor day, except when asleep, which rest itself was of short duration. I then took your excellent Solvent, which, in less than a month, began to bring away the stone, by dissolving it to a fine sand. It is judged, when whole, to have been as large as a pigeon's egg. I took the Solvent but about twenty weeks, which, with the blessing of God, has, I believe, quite cured me. I have taken none since November last, and yet I continue very well. May God still give his blessing to your medicine, by which, I hope, numbers will be relieved as well as your very humble servant,

Trickenham.

MARY LOVE.

From the rapid dissolution of the calculus, in the foregoing case, it may be fairly concluded, that, besides the advantages that sex derives in this disease (from the different structure of the seats of it) over that of men, their more temperate diet also prevents the stone from acquiring that firmness which is usual in those of the other sex. This observation will appear more than conjectural in the recital of the following case, which, for its singularity, is retained in this edition, though published in all the former ones.

C A S E V.

The Particulars of the following Case were transmitted to me by the Favour of RICHARD PHELPS, Esq. of Dunster, near Minehead.

MRS. BARNES, of Taunton, in Somersetshire, had been afflicted more than seven years with the confirmed stone and gravel, to a very violent degree, during which time she consulted the most eminent in physic, even those who were at a great distance; and, although she had taken almost all the medicines common in these cases, she daily grew worse, insomuch that she was at length given entirely up, and her death every hour expected. In this melancholy condition she was informed of the Solvent, and was prevailed upon, even in that languid state, to begin a course of it. She was soon sensible of ease, and began to discharge some gravel; and was now sufficiently convinced of the safety of its operation, of which, before, she had entertained some doubt, by the suggestions of some physical neighbours: she took the Solvent regularly to the ninth second size bottle, by which time she had voided such a quantity of sand and gravel as could scarcely be credited, being, it is averred, not less than half a pint. By this favourable discharge of gravel, together with the cessation of many disagreeable symptoms, she had reason to hope her disease was about to leave her; but she was suddenly surprised by an attack of the most acute pain she had ever felt, the irritation of which had abraded and forced away the mucus of the bladder, &c., in a great degree. In this situation she was advised by Mr. Phelps, and the clergyman of Taunton, to consult me by letter; and as I had not the least doubt but there was a stone endeavouring to pass, I recommended her to take the Solvent in its full dose, and advised her to desist from much motion till she was better—she did so, and before a third part more of a large bottle was taken, she passed, with very moderate pain, a stone about an inch long, and very near as much in circumference; this was followed by two more, very little smaller, which very considerably lessened her uneasiness. She continued the Solvent to the end of two bottles, by which time she had voided near a hundred small stones, the largest of which were of an uncommon shape, almost flat, resembling, in figure, small dried garden beans. The pains now entirely ceased, and before she quite left off the Solvent, her water, which before had assumed every morbid colour and consistence, now became entirely clear; and she recovered her strength and appetite, to the astonishment of all who had known her before. The progress of this cure is so wonderful, that the world might

justly suspect its reality, if it was not authenticated by many reputable persons in the neighbourhood, where her situation was perfectly well known.

C A S E VI.

The following Letter came too late to be inserted in the former Edition, except in a few Copies, by way of Appendix.

TO MR. PERRY.

SIR,

WE, the Minister, Churchwarden, Overseer, and other the principal Inhabitants of the parish of Elsenham, in the county of Essex, join with James Clark in returning you our most hearty thanks for the very remarkable cure of him by your most valuable Solvent. He is a very sober, honest, poor man, who has no less than seven children; he had been greatly afflicted with the stone and gravel for many years, and, for several of the last, to such a violent degree, with such excruciating fits, as to render him quite incapable of stirring out of his house for four years together.

Your Solvent brought from him great quantities of gravel and pieces of stone, and now, by the blessing of God, with that excellent medicine, he is so well restored to health from that disorder, which had baffled the power of all other medicines, that, for above a year past, he has been able to go to his daily labour as another man, and has gone through it with far more ease and pleasure than could possibly be expected, to the great astonishment of every body who knew his case.

Your generosity and goodness to this deserving object of compassion, in sending him the Solvent, time after time, *gratis*, cannot fail to yield a true satisfaction to, and reflect the greatest honour on, your liberal mind; and we beg leave to assure you, that we are ever ready to authenticate this very singular and extraordinary cure, in justice and gratitude to you, and as a duty we owe to the public.

Signed, by order of the said parishioners,

By, Sir,

Your most obliged humble servants,

John Canning, Minister,
John Mumford, Churchwarden,
John Pamphillon, Overseer.

The author having occasion to make a visit at Stanstead Hall, within a mile of Elsenham, in the summer of 1812, he had the pleasure of learning from Mr. Canning, the worthy rector of the place, that the Solvent had continued to render relief to the afflicted in the same disorder, in that neighbourhood, though nothing had occurred of so remarkable a nature as the foregoing.

C A S E VII.

Of GRAVEL.

MR. JAMIESON, by the desire of Sir Lucas Pepys, consulted me in a case of the gravel, which he had had for a considerable time to an extreme degree, insomuch, that he was no longer able to walk or ride with ease, and complained of exquisite pain in his loins, and in the neck of the bladder, with almost an entire stoppage in making water. Although I was convinced his case was gravel only, I gave him no other medicine than the Solvent, with a view to check the disposition of the urine to run into those concretions. In a short time he began to void prodigious quantities of globular pieces of gravel, scarcely ever urining without being able to collect half a tea-spoonful. The pain at the neck of the bladder abated, in proportion as the gravel was voided; but he never ceased to complain of a weakness and uneasy sensation about the loins and kidneys. He continued free from pain at the neck of the bladder for the space of about four months, but those above-mentioned continued, and the gravel began to form again, occasioning the same complaints as at first. This second attack was treated in every respect like the first, during which he passed such amazing quantities of loose red pieces of gravel, as would astonish the most credulous. The cause of so hasty and abundant a collection of gravel, I considered as deserving particular attention. I found it to be almost universally of one colour, in spherical pieces, and this gave me reason to suspect that each separate globe might have a nucleus different from the mere junction of the primary particles. I was conscious that a weakness of the loins augmented the pain of which he complained, for he had this when the gravel was supposed to have all passed; and that, although he had never made what might have been called bloody urine, yet a sediment was often observed at the bottom of it, which had every appearance of fine blood globules, that had lost their bright colour by lying in the urine. I

therefore began to consider that, although, in a natural state of the kidneys, the blood globules are prevented from passing the secretory glands, yet, should any of those glands be extraordinarily relaxed, some of the fine globules might pass through them with the urine, and instantly become nuclei for those small grains of stone. I was the more inclined to this belief, by considering that the reticular gland or membrane of the eye, when relaxed by cold, a blow, or other injury, suffers an extravasation of the finer blood globules, which gives rise to the *blood-shotten eye*. To satisfy myself, however, concerning these conjectures, I carefully divided several of the round pieces of gravel; after which, with a good microscope, I was able to distinguish a cavity in the centre of them, with an appearance that left me not a shadow of doubt of globules of blood being the nuclei of the concretions.—*Frère Côme*, the noted lithotomist of Paris, has made the same remark:—and, indeed, it would have been difficult in any other manner to account for the myriads of pieces of gravel which formed in so short a time.

The conclusion naturally to be deduced from this, is, that if in place of so many globules of blood, detached at once, they had all been collected in one mass or drop, instead of the formation of so many grains of sand, there would have been, perhaps, a single stone, which must have increased in a considerable degree, since it would have been supplied from that abundance of particles which were necessarily distributed to so many separate nuclei.

Being treated throughout as in the first instance, till there was reason to suppose the gravel was wholly expelled, he was put under a course of tonics with the chalybeate waters; and he remained well, to my knowledge, for three years, when he sailed with Lord Cornwallis to India.

C A S E VIII.

The following is the Case of HUGH STEVENSON, Esq. father of the present Doctor Stevenson, a Surgeon at Egham, Surrey, being an Extract of a Letter from him to Mr. HOME, father of Sir E. Home, Surgeon of the Savoy, and published in a small Work of this last mentioned Gentleman.

ABOUT twelve years ago, from want of rest and continual pain (which was daily increasing, in spite of the many powerful medicines taken to relieve me), my flesh was wasted, my appetite decreasing; night sweats, with swelled legs, came on. I could not walk a quarter of a mile, could not ride on horseback, could not bear the motion of a coach, except on turf or very

smooth road, without severe pain and making bloody water. I could not lie in bed above a quarter of an hour at a time, from an irritation to make water, then did not make above half an ounce at a time, and that by drops, with very acute pain: when turning in bed, which I was obliged to do every time I awoke, the sensation from the stone rolling in the bladder made the whole surface of the body so irritable, that if any part of the sheet or bed-clothes touched me, it felt like cutting with an edged instrument; so that Mrs. Stevenson was always obliged to support the clothes while I was turning.

Thus circumstanced, I was told of much benefit being received by taking Mr. Perry's medicine, known by the name of *Adams's Solvent*. Having an opportunity to taste it, and discovering nothing corrosive or unpleasant in it, tempted by the smallness of the quantity necessary to be taken, I determined, though without faith, to give it a few weeks' trial.

I took it nearly in the manner and quantity directed in the printed paper wrapped round each bottle, viz. two spoonfuls night and morning in veal broth, barley water, milk and water, &c. which I increased in a fortnight to three tea-spoonfuls at night.

I had not taken more than two bottles, when I thought some of my severest symptoms were not so acute; by this, encouraged to persevere, in three months I felt sensible relief, made water with less pain, and at longer distances: in six months I could sleep sound an hour and a half at a time without irritation to make water; could walk a mile, and bear the motion of a carriage moving gently.

At the end of twelve months, still continuing the use of the Solvent, I could bear the motion of a hackney coach over the streets of London, with but little inconvenience; could lie in bed for two hours and a half, without irritation to make water; could turn in bed without pain, or even feeling the motion of a stone. My health was by no means hurt by the use of the medicine, but, on the contrary, I ate, drank, and slept, better than before; and though I by no means could call my then situation a perfect cure, yet I felt myself comparatively happier than if I had never been ill.

For two years afterwards I continued the medicine in smaller quantity, and am, at this time, I thank God, in perfect health; and what little difficulty remains in making water, I impute to a diseased state of the neck of the bladder, and adjacent parts, from the injury they had received from the stone, by so many years irritating and lying on them, as well as from the frequent returns of tumid and inflamed bleeding piles.

From a tendency to be costive, I have, when taking the medicine, abstained from every heating cause, by meat, drink, exercise, &c.; and if from cold, or any other accidental cause,

fever came on, I discontinued its use, till these symptoms, by proper medicines and regimen, were removed. Castor oil, soap, and rhubarb, and large glysters, &c. were occasionally used to counteract its astringency.

Throughout the taking of the Solvent nothing has come away in the form of a stone; but, for the first seven months, the water was turbid when made, and immediately deposited a quantity of impalpable powder. When dry, this powder shewed no saline crystals, nor did it dissolve in warm water, but immediately subsided. Does not the above appearance give reason to suppose that the impalpable powder was a part of the stone dissolved? as by a continuance of the muddy discharge the pain decreased, and gradually disappeared. Is there not some reason to suppose the stone is dissolved, or, at least, rendered smooth, so as to give less pain? If only lessened or made smooth, would it not sometimes fall upon the neck of the bladder, or obstruct the discharge of urine, which is not the case? If the stone is not dissolved (which I flatter myself it is), it must have adhered, or is confined in a sac, and so not felt.

But let me not *theorise*, only return thanks to *Almighty God!* for the happiness I now enjoy, in being restored from a state of the greatest misery and distress to a state of perfect health.

I most sincerely wish that you,

Sir, &c. &c.

H. STEVENSON.

C A S E IX.

The two following Cases afford every Reason to suppose that Stones in Children are less compact than in Adults; from which it is as natural to conclude, that the more our Diet (while the Calculus is forming) approaches the Simplicity of theirs in its Quality, the less likely is the Stone to acquire the Density and Hardness which are remarked in many.

MASTER THOMAS, son of Josiah Thomas, Esq., of Guinea Street, Bristol, had been afflicted with the stone seven years, and at so early an age that it was not considered as that disorder, but treated, at times, as cholic, at others as spasmodic. The complaint, however, as he grew, acquired additional strength, till, at last, he was unable to walk for the pain, and a very considerable quantity of foetid pus was evacuated with the urine, which plainly indicated an ulcer in the bladder: he was now sounded, and a stone of a considerable size discovered; upon which, a consultation of the most eminent physicians in London was had upon the expediency of his being cut, and

which might have taken place but for his extreme weakness and emaciated condition. Sir Noah Thomas therefore advised the trial of the Solvent, and he was accordingly carried back into the country to make trial of it, but without any great hope of advantage. He had left school some time before, on account of the violence of the disorder; for, in the last year of his being there he had, from that cause, made little progress in his learning. By the time he had taken the Solvent a month, a prodigious quantity of purulent matter and mucus passed, and, in a month more, some earthy substance was plainly seen in every making of water, and the urine was become almost clear of that thick jelly-like matter which it had before abounded with; his pain now lessened greatly, insomuch that he could walk about, and he began to recover his flesh surprisingly. In two months more, nearly a half quarter of a pint of sand was collected from the urinal, after repeatedly washing the sediment with warm water. At the end of about eight months he appeared to be totally cured of the stone, and to have recovered his strength and flesh, so that he was again put to school, with the caution of giving him the medicine, once a day, for a time longer; in three months more it was quite laid aside, and the next autumn, in my way from Bath, I called to see him at Keynsham Academy, when, instead of an emaciated puny youth, I found him in the highest appearance of good health, and learned that he advanced rapidly in his education.

Since the distant period of this fortunate recovery, my then young patient is become a father of a little family, is a sugar-baker in the city of Bristol, where he assured me, not long since, that he had experienced no return whatever of his early and menacing disorder.

C A S E X:

THOMAS GALE, Esq. near the four-mile stone, at Hammer-smith, called upon me, and acquainted me he had a son (a child about four years old), who had been ill for a considerable time before he was suspected to have the stone; nor was it till he was sounded by Mr. Chafy, of Berner's Street, that his family were convinced of the reality of it. He had, at times, suffered the most excruciating torture in making water, which, by fits, would be every half hour, in small quantities; and he would throw himself into all manner of postures, and cry out in the

most affecting manner. Upon this representation, I advised no time to be lost in putting him under a course of the Solvent; and the child began with the dose proportioned to his age. In a month, or thereabouts, I went to see him, when I learnt that the fit had returned at the usual period, but with less violence. He had, for a considerable time, had a weakness at the neck of the bladder, which occasioned his water to run from him insensibly; this, no doubt, was brought on by the pressure of the stone on the neck of the bladder, and which would as probably leave him upon the removal of the disease itself. The second time I saw him I found his fits of stone but of trifling concern, and he could make water without much pain. By the time he had taken the Solvent eight months, there was not the least reason to apprehend any remains of the disorder, for his urine (which had had a considerable quantity of mucus and sand in it during the use of the remedy) now became clear, and, in all respects, healthy in appearance; it therefore remained only to strengthen the sphincter of the bladder, for which I recommended him to leave off the Solvent, use a partial cold bath, and take a decoction of tormentil root.

CASE XI.

Of the Honourable Mr. CHARLES HAMILTON, Uncle to the present Marquis of Abercorn.

IN his first letter to me, he remarks, that he suspected a stone had formed, or was forming, in his bladder; that he had taken soap pills twice a day for a year, and then blackberry conserve or jam, without removing the complaint; for, that he discovered, upon taking a long walk, his urine to be bloody, on which account he began again with the soap pills, but they were so forcing to his bowels and the urine, that he was obliged to leave them off: soon after this, the tendency to make water grew frequent, with strangury and uneasiness (almost a pain, he said) at the *glans penis*, and particularly after making water, and which, he observed, from reading my Disquisition, was occasioned by the neck of the empty bladder touching a stone:—he further says, that, having been accustomed to void much sand, and none having lately come away, he apprehends it is in a state of *aggregation*, and forming a large stone. He adds, that though there is no assurance of this being the case, yet as he is informed the Solvent will do no injury, he is determined to take it, and wishes to know how he might be certain of having it genuine, as he has heard of a spurious medicine dispensed by people in the country.

His next letter to me was as follows :--

SIR,

YOUR Solvent has had a very extraordinary effect upon me, and seems to have more apparently shivered the calculus to pieces, than I find described in either the first or fifth edition of the Disquisition.

Jan. 10. I began to take the Solvent, two large tea-spoonfuls at a time, night and morning, and finished the bottle the middle of February, during which time I voided much sandy sediment and mucus in the urine.

March 6. I voided a large piece of calculus, in shape like a quarter of an almond at the pointed end; that very night I began the second bottle, taking two large tea-spoonfuls, night and morning, as before.

March 8. I voided another piece of the same calculus, twice as big as the former, insomuch, that it stopped in the urethra till I made a more than ordinary effort, which forced it out, with some blood, as the pointed parts had just scratched the urethra near the glans.

March 9. I began to take the full dose, three large tea-spoonfuls, night and morning.

March 12. I voided another piece of the same calculus, less than the last, but larger than the first.

April 2. I voided a small piece of the same calculus.

April 6. I voided a very small piece of the same calculus, and the same day I finished the second bottle.

The above eight pieces, manifestly of the same calculus, look to me as if the points of all of them terminated in the centre of the nucleus: if that conjecture is right, one may form some judgment of the present diameter of the stone, and in what proportion it has diminished. I am sensible I have voided other pieces at the water-closet, for I felt no pain upon voiding any of these; and which is very extraordinary, ever since I have begun voiding calculi, I have never felt the least pain any where, except an uneasy sensation after making water, which I had just before I took the Solvent, and which has quite left me from the first taking of it.

There is still some sediment in the urine, but very much diminished: I have desired Mr. Eddie, who sent me the last, to send me two more bottles, which I propose going on with immediately: I will never be without some in the house, and shall, as I ought, strongly recommend it. I suppose I should take it as long as any sediment shall be found in the urine, but should be glad to know what rule I am to observe in leaving it off, supposing my cure completed. I am, Sir,

Your much obliged humble servant,

CHARLES HAMILTON.

Extract of another Letter.

SIR,

THOUGH my cure is not yet completed, I would not defer any longer acquainting you with the wonderful effect your Solvent has had upon me. I have not yet taken half the last bottles you sent to me, for as it has a purgative quality with me, I have been obliged to take it in smaller doses than usual. I am, however, in hopes that, by the time I have finished the Solvent I have, I shall have brought away all the calculi. I imagine what I have before taken in large quantities (for I took it sometimes at the rate of eight, and sometimes twelve, spoonfuls in twenty-four hours); I imagine, I say, that it has so impregnated the calculus that it now easily dissolves; for it is amazing what I have voided since the nineteenth of May, twenty large pieces of calculus, besides many middling sized ones, and a quantity of very small pieces like egg-shells, as you describe, and many pieces of the nucleus, and a vast deal even of fine dust must have passed unobserved, at the water-closet and elsewhere, and, which is very extraordinary, no pain now; for the pain I had after urining has left me since I have taken the Solvent. It is now six months since I began to take your Solvent; in two months time I began to void pieces of calculus, and had yesterday the curiosity to weigh what I have preserved, and they weigh exactly one drachm and a quarter: if I could get a parcel of them joined together where they tally (which I will endeavour), I could guess at the size of the stone, or if there be more than one, which I suspect.

If any friends of yours, or any medical gentlemen, are desirous of seeing them, I shall be very willing to shew them, and vouch to them what I have written; I think it is but justice to you. I believe my experience in your medicine has removed all the prejudice the physical people had entertained against it, as the lady you have before heard of is well; I met her at an assembly not long ago. I have told Dr. C——, her physician, of the good effects of it on me, at which he seemed much surprised.

I am, Sir, &c.

CHARLES HAMILTON.

Another Letter from the same Gentleman, removed to the Crescent, Bath.

SIR,

YOUR Solvent continues to do wonders for me, for though the state of my bowels obliged me to take it very sparingly, yet, notwithstanding, I have voided a much greater quantity of calculus and nucleus than before: from July 10th

to August 10th, I voided forty-eight grains; from August 10th to September 10th, thirty-nine grains; the whole quantity voided (that I could save) is (from the 6th of March, when the Solvent first began to operate) above half an ounce.

As soon as I found my bowels grew stronger, I increased the dose gradually; and from the 9th of this month have taken the full quantity night and morning. I am now apt to think it was some particular weakness in my bowels made it disagree, for now, besides finding no inconvenience from the increased quantity, I have taken the first sort you sent me since the 16th inst., which agrees as well as the other—I must desire you to send me two more bottles. I should be glad to know how long it will keep perfectly good; I have very little left now, as I gave almost all the bottle I am now drinking away to poor people, who could not afford to buy it, which I shall continue to do as long as I live, for your sake as well as that of my poor fellow sufferers. I have talked over the Solvent with several medical gentlemen, as well as many others; and have surprised and converted many. Dr. Moysey, my physician, after I had taken it some months, unknown to him, upon my telling and shewing him the effect, advised me by all means to continue it, but with caution as to my bowels, and that he should recommend it himself to his patients in similar situations. Yesterday, I shewed it to a very ingenious man, Mr. Bliss, of Oxford Street, an old acquaintance of mine, who was much surprised.

I apprehend, by the different sized concaves of the pieces of calculus, and convexes of the nucleus, that mine is not all one very large stone, but several middle-sized ones, and that the Solvent is acting upon them all at once. As the quantity voided decreases, I suppose I shall come to the bottom of the quarry at last, but propose taking it till I have been three weeks without voiding either calculus or sediment, then I suppose I may reckon my cure completed.

I am, Sir, your very humble servant,

CHARLES HAMILTON.

SIR,

I HAVE voided only twenty-four grains last month—some months I have voided above sixty grains. I take two teaspoonfuls night and morning, without purging, for some months, and propose taking till I have ceased voiding any thing.

I have mentioned to many of the faculty, and others, and shewn them what I have voided, and without any inconvenience, which astonishes them all; and I believe my case will operate as strongly in favour of the Solvent as any you have published.

I shewed them to the Duke of Northumberland, to his great

amazement; but he says it won't do for him, as he has reason to believe one large stone almost fills one of his kidneys, and if it was broke to pieces, like mine, it might kill him in endeavouring to pass the ureters.

I believe mine is not one, but several largish stones, by the shape of the pieces, both of calculus and nucleus, which I keep separate, and which look as if they had been broken to pieces with a hammer.

Though I cannot call mine a radical cure, I think my case as extraordinary as any you can quote, and you are at liberty to make what use you think proper of it; but I apprehend my habit of body generates stone so fast, that nothing can prevent its recurrence in me.

I am, Sir, your humble servant,

CHARLES HAMILTON.

—

Remark.—Mr. Hamilton (one of the paternal uncles of the present Marquis of Abercorn), so admired for his skill and taste in horticulture, planned the grounds and erected that beautiful house at Cobham, in Surry, called *Pain's Hill*, which he disposed of to Mr. Bond Hopkins, when he wished to retire to Bath for the sake of his health. The author called upon him at Landown Place, near that city, in the course of the year after the receipt of the last letter above published, and found him in perfect health and excellent spirits, and had the pleasure to witness that, for the five remaining years of his life (being then about seventy years of age), he continued quite free from the stone. It is not irrelevant to observe, that his first cousin, the Honourable and Reverend Mr. Hamilton, of Taplow, in Berkshire, was, previous to this period, afflicted with the stone, and underwent the operation, but expired in consequence of it.

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C A S E XII.

A FIELD-OFFICER of the Guards was obliged to return home from service in the Peninsula, in the year 1812, from a severe attack of stone in the right kidney, which had occasioned him to make bloody water after every exertion or fatiguing march. Mr. Hay, the present surgeon-major of the Third Regiment, from the benefit his father had derived from the Solvent, recom-

mended the Colonel to take the same medicine, which advice was also approved of by Sir Lucas Pepys, physician-general to the army, who was pleased to say to the author himself, that he had often recommended many to adopt the same course, with signal advantage. In less than four months the offending calculus (not larger than a barley-corn) was evacuated; and this active and zealous officer was again restored to the service, being, at this time, the Lieutenant-Governor of a considerable garrison in Great Britain.

C A S E XIII.

THE Right Honourable Elizabeth, Lady Lyttelton (Dowager of George, Lord Lyttelton), had suffered very considerably with the stone for six years, in which period she had, at different times, been under the care of three of the most eminent physicians, and taken every medicine then usually prescribed in that complaint, which not only gave her no relief, but proved hurtful to her stomach. Her ladyship was importuned, by Lady Mary Churchill, to make trial of the Solvent, or consult the author: she did both, and, in the course of a few weeks, she became easier, and her stomach visibly strengthened. In three months the Solvent produced all the good effects I had reason to expect from it, the particulars of which, however, cannot, from considerations of delicacy, be detailed. Her ladyship took the medicine for three years and upwards, occasionally, as a preservative, and instead of its being found injurious to her, she has often declared, that she not only owed her ease to it, but her life.

This so happy a recovery from one of the direst diseases which afflicts human nature, was progressive and uniform, though slow. In the period of the second six months, Lady L. parted with as much saburra and shell-like bits of stone as would fill a table spoon. Mr. Keate, the present surgeon-general, was not unacquainted with the singular restoration to health in this lady, till then given up, as it were, to the ravage of the disorder. Lady Lyttelton's niece, the present Lady Rich, as well as the Rev. Sir Charles Rich, her husband, of Rose Hall, in Suffolk, will, no doubt, be happy to testify the fact of this singular recovery, it being the desire of Lady L. that all her friends, acquainted with her case, should do so, for the benefit of others so afflicted; and, in token of her gratitude to the author for the service rendered, and what she was pleased to consider and call disinterestedness in him, she flatteringly mentioned him, with a legacy, in her will.

C A S E XIV.

THOUGH any further testimony of the Solvent's innocency may not be necessary, yet an additional proof of its not aggravating gouty or bilious complaints will not be thought superfluous, since these complications have been thought reasons for suspending the use of the Solvent. It is, however, an undoubted fact, that the medicine is beneficial in gouty and bilious cases; but lest it might be suspected that partiality may, in some degree, incline me to consider a medicine as a *panacea*, because it has done wonders in one disorder, I add, with permission of the writer of it, the confirmation of these facts, by a letter received from Sir J. Call, Bart., Member of Parliament for Callington, in whom, at that time, the nucleus of the stone remained to be dissolved, which has since been happily effected.

At Sir George Young's, Great Russel Street.

SIR,

HAVING taken your Solvent, at intervals, for some time, I think it necessary to acquaint you of its effects on the object for which I took it, as also on my constitution in general.

Riding on horseback pretty smartly, I made a considerable quantity of bloody water, without having previously felt any pain or extraordinary sensation. Not knowing from whence or from what cause it proceeded, I dined in company, and making no more such water, I paid no regard to what had happened, but returned to London from Portsmouth, where I then was, and afterwards went into Cornwall; whence I rode again only five miles, and then made bloody water as before; this alarmed me. I consulted a surgeon and physician, who pronounced it the gravel, and prescribed soap-pills, lime-water, and some other medicines, which I took, at times, during six months; but on riding or walking much, always made bloody water, though without any considerable sensation. I came to London, having, at times, experienced severe irritations in the bladder, and frequent urgings to make water, and being very unable to bear the motion of the carriage on the first part of the road. I was soon after sounded by Mr. Young, surgeon, who found my complaint to be a stone in the bladder, which I could feel with the sound myself. I had before taken a bottle or two of your Solvent, but now resolved to take it regularly, and to observe the regimen prescribed, neither eating meat, nor drinking wine, except at dinner, and never to any excess; but having been accustomed to drink as far as a pint, I have seldom taken

less at, and after dinner, than five or six glasses: my supper, if any, has always been according to your direction.

I took the Solvent pretty constantly half a year, and began to bear travelling better, but I could not ride a horse except in a walk. The travelling up and down to Cornwall in a carriage became very easy, and the motion of a carriage over the London pavement was not troublesome. I, at length, rode out with the harriers, and often trotted, without making any bloody water (but did not venture to gallop), and I can walk many miles in a day without the uneasy sensations I formerly felt. In short, though I am at times sensible that there is a nucleus still in the bladder, yet I trust it is not large, as I feel no sensation in jumping down, nor any frequent urgings to make water; on the contrary, I often go four or five hours without evacuation, and am seldom disturbed in the night. I mean to go on regularly again with the Solvent, and hope to obtain a total relief.

With respect to the effect of the Solvent on the constitution in general, I am clear, as to myself, that it has been very beneficial; for though, when I began to take it, or before I felt any sensations of the stone, I was, at times, of a very bilious habit, had frequent head-achs, and strong symptoms of the gout (which my father fell a martyr to), yet I do not remember, for twenty years past, to have been so free from all the above complaints as I have been since taking your medicine, nor to have enjoyed a better state of health, except with regard to the complaint for which I took it. I have enjoyed a constant good appetite, and more particularly so the days I take the Solvent. My body has always been open, as it always was, constitutionally; and I never have had the least nausea at the stomach, or disinclination to any kind of food. So far I can speak with certainty as to what I have experienced, and I mean to persevere, in hopes the effect will be as certain in relieving me wholly from a complaint, which, though very tolerable at present, is not agreeable in prospective.

I am, Sir, &c.

JOHN CALL.

There remains nothing further to add, but that Sir John Call, in a few months after, evacuated three small nuclei of stones, and remained so perfectly free from the disorder as to take upon himself the office of Surveyor of His Majesty's Forests and Timber; and died at the end of five years (upwards of seventy years of age), of a disease in no degree allied to the stone.

C A S E XV.

The Case of JOSEPH BELL, Esq. Surgeon, at Wycombe, Bucks, as drawn up by himself, and inclosed in the following Letter :

DEAR SIR,

INCLOSED I send you a simple narrative of facts, as they occur to my recollection : you will be so obliging, if you think it may be of use to the world, to put it in proper form ; and I assure you that I shall at all times be ready to give the most ample satisfaction to every one who may be induced to apply to me on the subject, as I feel it a duty I owe to the public so to do. The obligation I am under to you for your attention to me, during the course of the Solvent's trial, will never be effaced from my memory. The relief I have experienced will always incline me to keep a bottle or two in the house, for which reason I beg the favour of you to send me two before you go to Paris :—till your return therefrom, permit me to subscribe myself,

Your obliged and devoted humble servant,

JOSEPH BELL.

“ON my road to Kingston-upon-Thames, I was seized with a severe fit of pain in my left kidney ; I had been, for four years back, too well and too repeatedly acquainted with the kind of pain to mistake that which I then suffered ; however, as I had only five or six miles to ride, I pursued my journey, at the end of which, on getting off my horse and calling for a chamber-pot, I passed a very considerable quantity of bloody water : my pain, by this time, was so considerably increased, that I was under the necessity, though at an inn, of having recourse to the warm bath and laudanum, of which I took between eighty and one hundred drops. The relief I experienced was very little in proportion to the quantity of opium I took, and my night was a night of torture. By the persuasion of a friend who was with me, I the next day returned gently home, in a chaise.

Having taken the Solvent for a month previous to this fit, my friends, and Mr. Rose, a very eminent surgeon of this town, advised me to send for you : the state in which you found me I need not describe ; suffice it to say, that from the time of my being taken ill, to the evening on which I apprehend the stone passed from the kidneys into the bladder (being a space of nearly three weeks), the pain I underwent is beyond description. Dr. Bates, an eminent physician in this neighbourhood, and Dr. Par-

son, professor of anatomy in Oxford, were likewise called in to my assistance, particularly as you were at such a distance from me. The methods used during the fits of pain you are perfectly acquainted with; I shall therefore content myself with informing you, that as soon as the stone had passed, I again, by the advice of those attending me, had recourse to the Solvent; and from persisting strenuously in the use of it for twelve months, I have the greatest reason to flatter myself that it has rendered me every benefit I could possibly hope or expect, without feeling any one ill effect from persisting so long in its use. For the first two or three months, during the taking of the Solvent, I passed a considerable quantity of large rough gravel, attended, at times, with pain; when, for three or four months more, I passed a pretty large quantity of very fine sand; since which time I have hardly experienced a twinge, or passed a particle, at least in comparison to what I had suffered or what had passed before, and am now, thank God, pretty well able to go through the fatigues of my profession."

Remarks on the above Case.

Upon being desired, by express, to attend Mr. Bell, I got into a chaise, and reached his house about two o'clock the next morning, when I found him in a high fever, in the most excruciating pain, and, at times, delirious; his vomitings, I learned, had been violent, and his urine was bloody to the highest degree. I immediately ordered copious bleeding, but was informed that attempts had been fruitlessly made with the lancet, and, as I apprehended his life in some danger, I determined to renew the attempt myself, and succeeded, by which I drew off eighteen or twenty ounces of blood. His fever now subsided, and he became sensible, so as to describe his feelings: balsamics and anodynes were alternately given him, and I had the satisfaction to leave him in a fair way of recovery. The piece of stone soon after passed, and he took the Solvent, without interruption, till hopes were entertained that nothing remained behind. It may be proper to add, that the stone had all the signs of being operated upon by the Solvent, by reason of its specific lightness, since a calculus of the same dimensions and figure, not so operated upon, weighs nearly three times as much, viz. twenty-five grains, whereas his own weighed but nine grains.

C A S E XVI.

THE following very important Instance of the Efficacy and Safety of ADAMS'S SPECIFIC SOLVENT, was lately communicated by a worthy Clergyman.

The Case of Mr. WILLIAM HARPUR, at the Right Honourable Lord Robert Bertie's.

MR. HARPUR had been afflicted with the stone many years, to that degree, as rendered his life, at last, extremely burdensome, and made him incapable of using exercise, or even any motion, without great pain, the stone having acquired such a weight, that he could sensibly feel it in his bladder upon every sudden movement, and, particularly, when he turned himself in his bed. It is not possible to describe all the medicines he had been recommended to, and which he had taken, without relief. He was at last advised to take the Solvent, which he did to the quantity of three bottles before he perceived any alteration; but, in the fourth or fifth, he was so much easier as to be able to walk about. He also began to discharge gravel and sand; and, by the time he had taken as much more, the stone was so far operated upon, that it came away in concave pieces, like broken nut-shells. Previous to his taking the Solvent, he had been urged to make water eight or ten times in an hour, and with such exquisite torture, that his cries were heard at a very considerable distance; but, by this time, he could retain his water for three or four hours, and make it with but slight pain. The stone continued to be voided, sometimes in the form of powder, at other times in those shell-like pieces before described; till, at length, a round piece (supposed to be the nucleus) passed the urethra; and, from this time, he dated his perfect cure, for he could now ride on horseback sixty miles in a day, without the least inconvenience. Lord Robert, from his great humanity, took infinite pains to make known the efficacy of the Solvent, for the benefit of the afflicted in similar cases.

Observations on the foregoing Case, by the Clergyman.

The peculiar form of the discharge of the stone, in the aforesaid cure, is a greater enconium on the Solvent than any thing that can be said; as it plainly shews it does not act by a forcing or irritating quality on the vessels themselves, but from a power of dispossessing the stone of its principles of cohesion.

C A S E XVII.

THE following Cure presents not only indubitable Evidence of the solvent Power of this Medicine in the Stone and Gravel, but also its happy Effects in removing the Disposition of the Habit to calculous Concretions, an Advantage which even chirurgical Operation cannot secure to the Patient.

The Case of Mr. J. ROBERTSHAW.

MR. J. ROBERTSHAW, a non-commissioned officer in the Royal Regiment of Horse-Guards Blue (and in General Blathwayt's troop), was, for many years, tormented with fits of the gravel, which, at length, became stone, rendering him incapable of doing his duty. The accumulation was so rapid and alarming, that he kept his bed for six weeks, being unable, all that time, to stand upright but with the greatest agony.

At this period he was reported, by the regimental surgeon, to have a confirmed stone, and to be in great danger. General Blathwayt's servant was thereupon despatched for some Solvent, which, by the time Mr. Robertshaw had taken three weeks, gave him some relief; in six or seven more he began to evacuate quantities of stone and clayey matter. The excruciating pains which had kept him awake for nights together, abated, and symptoms threatening an ulcer disappeared.

By this happy change, Mr. Robertshaw could walk about, and, with further continuance of the Solvent, he ventured to mount his horse, passing stone and sand in prodigious quantities daily, till he grew as well as ever he was in his life, and continued perfectly well, doing duty with the regiment, to the surprise of every one who knew his case; his cure being considered as one of the most astonishing instances of the power of medicine.

His Grace the late Duke of Richmond, and Colonel Tuffnel, shewed great regard to the medicine and its proprietor on occasion of the above cure.

C A S E XVIII.

MRS. MILLER, of No. 23, Margaret Street, Cavendish Square, was many years troubled with a gravelly complaint, but, at length, it became the stone, with all its dire concomitants. She tried soap, lime-water, alkalis, and fixed air, to no purpose; for while the disease got no better, she grew weaker and

weaker, and finally resolved to undergo the operation, which was performed by Mr. Gunning, of Old Burlington street, first surgeon of St. George's Hospital. Three stones were extracted from the bladder, one as large as a pullet's egg, and the other of the size and shape of Windsor beans. Notwithstanding the great care of the operator to prevent, by a judicious use of the *scoop*, any fragment of stone from remaining behind, yet such was the tendency in the habit to give out concretions of that nature, that, in six months, Mrs. Miller was as much tormented as ever; she could not walk without intense pain, nor rest easy five minutes in a place. These, and other symptoms, equally alarming, brought her to reflect on the operation a second time, when, at that critical moment, the Solvent was recommended to her. She had not taken it three months before she found relief, and, in fifteen, was so completely cured, by evacuating prodigious quantities of stone, in pieces and in powder, that, although it is now some years since, she has had no return whatever of the disorder.

C A S E X I X .

THE following Case, with the Particulars of the Cure, were transmittted in a Letter from John Remington, Esq. of Barton End, Horsley, near Minchin-Hampton, Gloucestershire.

—

To MR. PERRY, Surgeon, &c.

SIR,

MR. DAY, of Nailsworth, in this county, desires me to lay the particulars of his case before you, which he has every reason to believe is the confirmed stone; therefore you will, as soon as you can, with convenience, as he is anxious to have your answer, be good enough to send me your opinion thereon, directed for me at Mrs. Munday's, the Turk's Head Coffee-House, Strand.

I know not whether you remember that I consulted you in your former residence, two or three years ago, at the request of a neighbour of mine, then in a most deplorable state, the recovery from which appeared highly improbable: now, as he was not only restored from racking torture to ease by your Solvent, but continues in health at this moment, though in a most advanced period of life, he is desirous, as well from inclination as duty, to make known so uncommon a cure for the benefit of the unhappy sufferers in like manner. It was as follows:—

Mr. Frost (of Horsley, in this neighbourhood) had been ill many years; insomuch that he could bear no exercise whatever,

being entirely confined to his house. He consulted many of the faculty; among others, a physician of Gloucester, and a surgeon of this neighbourhood, who conceived his case to be an ulcer in the bladder, but Dr. Jenner, of Berkely, the late Dr. Hunter's friend (and the inventor of Vaccination), affirmed it to be the *stone in the bladder*. His life was become insupportable, his pains without intermission night and day; and, in this deplorable situation, after having expended three hundred pounds in the pursuit of relief, he was told that nothing more could be done. At this affecting crisis, your Solvent was happily recommended to him, and I can testify the surprising cure it has operated upon him; for, before he had taken three bottles, he found respite from pain, and, ere he had taken as many more, he was able to look after his business. In this way his health amended, till it was perfectly re-established, which it has been these two years, insomuch that, although seventy years old, he rides out on horseback like a man in the prime of life.

This cure we think it our duty to make known for the benefit of the afflicted in like cases.

I am, Sir,

With grateful acknowledgments of Mr. Frost,

Your most humble servant,

Barton End, May 28, 1798.

JOHN REMMINGTON.

P.S. MR. FROST has recommended the Solvent to several persons afflicted with the stone and gravel in this county; and, though their disorders were nothing in comparison to his, yet the credit of the Solvent is still farther extended thereby, for those patients have all found the desired relief.

C A S E XX.

THE lady of — Baker, Esq. attorney at law, of Blagden, near Bristol (the place of the celebrated literary contest between its pastor and Miss Hannah More), was attacked by an acute disorder, which, whether by its own ambiguity, or the repugnance of a lady to speak particularly of its symptoms, was thought, by her medical attendants, to be almost every thing but what it really was. She was put under so many different courses of experiment without effect, her disorder every hour encroaching on her strength, that her two physicians were reluctantly constrained to give her up, and no one but the apothecary of the village conceived the least notion of her reco-

very. As soon as he was left to the reflections of his own mind and experience, he thought proper to write to me, describing the case and symptoms according to the best observations he had made, and the most accurate information he could obtain, proposing this rational question for me to answer, "That, as means for removing every disease to which such and such symptoms could be referred, except the stone, had been tried in vain, he had reason to suspect it might be this disease, though there were but feeble prognostics of it, and the contrary had been affirmed by two eminent physicians. He was desirous, therefore, of knowing whether the Solvent could be taken without any ill effect if no stone did exist in the kidneys and bladder, for both were affected. His patient," he added, "was willing to be governed by my answer." The particulars of that answer I do not now recollect, as it is a transaction of some years back; but, whatever it was, that gentleman was encouraged to administer the Solvent to his patient. In less than a month all doubts about the nature of her malady and sufferings were removed by the passing of some fragments of stone, and a great deal of saburra. She persevered in the same course, and, to the astonishment of her physicians, and every person about her, she recovered daily, but, at length, so entirely, that very lately I had the honour of seeing her in perfect health, surrounded by a most interesting and beautiful offspring.

There is no remark necessary in this case but what has been before made, viz. that the Solvent seems to produce its desired effect sooner in this than in the other sex; most probably, as has been before observed, from their more temperate manner of living.

Mr. Baker is a gentleman of fortune in the law, and of the first respectability in his profession, and through him, in a great measure, are the happy effects of the Solvent made known in his neighbourhood. It was from his zeal, which he is pleased to denominate his *gratitude*, that the subjoined case was made known to the proprietor and discoverer of the Solvent.

C A S E XXI.

MAJOR EYRE, of Knightsbridge, called upon me with a letter from Philip Gibbs, Esq. of Bathwick Street, Bath, containing the particulars of the case and condition of Mrs. Gibbs, who for some time had been in a declining and dangerous way, though attended by several medical gentlemen of considerable practice in that city. Her professional attendants could not agree about the nature of her disorder, nor did any of them allow it to be *calculous*. A lady, however, of considerable dis-

cerment, who lived in her neighbourhood, and frequently visited her, conceived it to be the stone or gravel in the kidneys. The pain across the loins was so excruciating, that the patient could, by no means, turn in her bed without help; and as her friends were apprehensive of her dissolution, they were anxious and desirous to try some new course of medicine without delay. As it was signified to me, that it would afford Mr. Gibbs great satisfaction if I could make his lady a visit, I hastened down accordingly, when, by a personal examination, and the accurate information of Mr. Anderdon, apothecary, of Queen Square, who had for some time attended her, I felt no hesitation in pronouncing her case calculous; and that no time ought to be lost in administering the *Solvent* to her. I was not, however, so sanguine of its effect as in most other cases, for, by the various evacuations, blisters, and bleedings by leeches, &c., she appeared scarcely to possess strength of stomach to retain any more medicine, and still less strength of body to hold out its operation. No person, however, could, with more perfect acquiescence, commence a course of the *Solvent* than Mrs. Gibbs, having previously been informed of the happy recovery of Mrs. Baker, of Blagden, a few miles distant from Bath. I began by giving two tea-spoonfuls every eight hours, which dose, with great satisfaction, I learnt, was retained in the stomach. At the end of the two days I remained in Bath, I was induced to blend some hope with the consolation I offered to the affectionate husband of this suffering lady (himself, to the great grief of all who are related or known to him, blind from a cataract in both eyes). It would be thought not altogether proper to dwell too minutely, as has been before mentioned, on the progressive operation and effects of the medicine in a case like this; suffice it to say, that, in a few days, an evacuation of sand, &c. took place in a quantity sufficient to evince to every one of her attendants and friends that her case was not now mistaken. She then began to take the *Solvent* in its full dose, and continued to do so for six weeks, but in half that time she was enabled to be taken out of bed, and removed into a drawing room on the same floor. She persisted in the remedy with very little intermission for six months, and gradually, but uninterruptedly, gained flesh, strength, and spirits; but as the discharge of sand continued almost constantly, and sometimes in prodigious quantities, it was not thought safe to lay aside the *Solvent*. As that symptom of the disease disappeared, she declined taking the *Solvent*, though I believe she never wholly omitted it to the year's end. To the unspeakable joy of her relations, and surprise of all who knew her in her illness, she was perfectly restored to health, in all respects. Here it ought to be mentioned, that the intelligent medical gentleman above named in this case,

with a liberality not always found in the profession, and peculiar only to generous and enlightened minds, encouraged by his countenance and advice the continuance in the course and regimen of the Solvent, as soon as his doubts of the nature of the malady were removed.

Doctor Parry, so eminent as a physician in the city of Bath, was, I believe, acquainted with every particular above stated, in Mrs. Gibbs's case; and will, no doubt, be ready, if requested, to authenticate what is advanced thereon. Mrs. Eyre, of Bath, the amiable widow of Colonel Eyre, late of the Queen's Regiment of Foot, and daughter of Mrs. Gibbs, will always be happy to speak of the Solvent as its just claims, and assisting humanity in like cases, may require.

Many persons, over apprehensive, are afraid of taking the Solvent in complicated cases, from a fear of aggravating some other malady, though there should be no doubt of stone constituting one portion of their sufferings. The following case evinces, in as clear a light as can possibly be shewn, the perfect innocency and salubrity of the Solvent under such circumstances.

C A S E XXII.

AN officer of rank in the army, but obliged to retire from the service on account of the stone in his kidneys, which it was feared were ulcerated by the long continuance of the disorder, under painful and distressing duty, and long marches in a hot climate, consulted his uncle, a professor of eminence at Edinburgh. The Doctor hearing of the extraordinary case of Dr. Boone (late physician of the forces, but now retired on a pension), was desirous of having the particulars of it, in order to qualify him for judging of the propriety of prescribing the Solvent to his afflicted relation, when Dr. Boone was pleased to write as follows:—

“SIR,

“I HAVE, for several years, suffered cruelly with what was conceived to be the stone, and which, about six or seven months ago, was ascertained by Mr. Lynn, surgeon, of Parliament Street; for he searched me, and I (as well as himself

heard the instrument ring against the stone. I then had been told of the great success of Mr. Perry's Solvent, but as I had another distressing ail I hesitated what I should do. I resolved, however, to have recourse to it, and I am ready to attest in the most solemn manner, even on oath if it should be required, that I have taken it above a year, and have received, I may almost say, a perfect cure from the stone; but the great benefit I have further received in my constitution from it, by being entirely relieved from a scrofulous affection of the most alarming magnitude, gives me such a convincing proof of the salubrious quality as well as efficacy of that invaluable remedy, that I am determined to take it, now and then, to the end of my life. Any thing further, if necessary, I am ready to communicate to you, or any person concerned; and am,

“Sir,

“With great regard,

“Your most humble servant,

“*House of Commons, April 17, 1806.*”

“J. BOONE.

C A S E XXIII.

THE Rev. Mr. William Winterbotham, of Horseley, in Gloucestershire, was, a few years ago (then living in London), afflicted with violent pains across the loins, which were first thought to arise from *lumbago*, and prescribed for accordingly, till at length his urine assuming a *pink colour*, something more serious was apprehended. He consulted me on his case, which I strongly suspected was *calculous*, and advised the immediate use of the Solvent. Even on the day he commenced taking it, his water was bloody, and it was with difficulty he could stand upright, much less move about. He was, in a degree, relieved before the end of a month, by the correction of the calculous diathesis; and, in the course of a few weeks more, after passing a few small irregular pieces of stone, he recovered his former case, and it is presumed, by the following letter from a lady, that he has remained well ever since.

CASE XXIV.

From Mrs. Cooper, of Stanley House, near Stroud, Gloucestershire, April 15, 1807.

"To S. PERRY, Esq. Surgeon

"SIR,

"I TAKE the liberty of troubling you with a few lines respecting my little boy, aged only nine months, who is now labouring under a disease of the lymphatics; occasioned, my physician tells me, by gravel lodged in the kidneys. The child was suddenly seized, about two months since, with violent pain, but where we could not ascertain, and, in the course of a few hours, he became swelled all over, particularly his hands, feet, and eye-lids. The medical gentlemen then supposed it to be the effect of cold, and therefore treated the complaint as such. The swelling subsided in a few days, but left his thumbs useless, and drawn in towards the middle of his hands. He has had a return, five or six times since then, of the swelling; and, about a month ago, we found that he passed sand in his water, which satisfied us with respect to his disorder. We have carefully preserved it since, and have often seen more in the bottom of the glass, after it has settled, but, at other times, it is quite clear. A particular friend of ours, the Rev. Mr. Winterbotham (who received a cure from the Solvent some time ago), recommended your medicine, which we have given him nearly a fortnight: we have not yet perceived any more sand or gravel brought off, and I am fearful we do not give him enough. Forty drops, morning and evening, is what he now takes; but as you do not mention the quantity to be given to a child under two years old, I request to know what dose you would recommend to be given in this instance; and how often it should be repeated. Mr. Winterbotham says you advised him to take it three times a-day. The quantity he takes now does not in the least affect his bowels as an astringent, they being quite open. I cannot imagine the child's diet since his birth can have been the occasion of the gravel forming, as I suckled him myself nearly eight months. He lived on the breast, except, at intervals, a little biscuit and panada. I have now weaned him, and for the milk, I substitute strong broth. He is an uncommonly fine fat child, and never felt an hour's sickness for nearly seven months. A year and a half ago, I lost a little girl only eight months old with this same disorder; but the physicians, who attended her, had not the least suspicion of the true cause of her death, though, a fortnight before that unhappy event, she passed, at once, by urine, a large quantity

of small rough gravel, and so continued to do, at intervals, till the day she ceased to exist. She certainly sunk at last from irritation. I beg to apologise for this long intrusion, but I should consider it a favour if you would indulge me with a few lines, suggesting what you think could be the cause of a formation of gravel in children so very young." &c.

I have been the more particular in transcribing almost the whole of this affecting and sensible letter, which does so much honour to the understanding as well as to the feelings of the fair writer, because it is so striking an instance of the proneness of certain habits, however tender in age, to allow the formation of calculus, where the diet is the simplest and most salubrious in nature. How far a peculiar quality or disposition in the milk of the parent may have contributed in this instance to the indisposition of the children, it is difficult to guess, and, I fear, will ever be impossible to prove. The whole, taken together, strongly tends to shew what I have before advanced, that so much does not depend upon diet as is imagined. The pristine cause is unquestionably out of the reach of any thing which can be produced by change or regulation of diet. We know it is sometimes, and it may be *pretty generally*, the case, that fine particles of blood are extravasated in the kidneys, which form so many little *globuli*, differing as to colour only in a shade darker or lighter: the matter or fine impalpable powder dislodged from the bones, by the attrition of the fluids against them, will unquestionably become the nidus of sand (for sand is no other than small gravel, and gravel than small stones). This matter, then, separated from the surface of the solids by the force of the circulation, may float in the fluids of a fœtus in the womb. From these, and other reasons, I have never thought it necessary to enforce on my patients a rigid adherence to any particular diet, other than what might best agree with, or not militate against, the medicine taken by them in their cure. That common and prudential injunction, as to temperance in living, and moderation of exercise, which holds good in all cases of sickness and indisposition, ought not to be lost sight of in this. While, therefore, I would not have the sufferer take an unnecessary concern about the choice of such innocent viands as

fish, fowl, veal, lamb, mutton, or beef; I would not have it forgotten, that, by inordinate eating or drinking, indigestion, fever, and a variety of other ills, are produced, which cannot fail to aggravate the chief disorder.

To return to the subject of my little patient, whose food or nourishment may appear to have been as innocuous as his life innocent. It becomes an important inquiry whether the malady he laboured under was derived from the maternal or other parent. A former child having apparently fallen under the ravages of the same disorder, may unquestionably lay the foundation for a belief that it was hereditary. At some future time, by the affable condescension and sensible communication of the lady herself, considerable satisfaction may be obtained upon so nice, so important a subject.

For the present, I hope I shall not be thought to have trespassed on the confidence of my fair correspondent in this delicate subject, by communicating that which cannot fail to place her in the most amiable light by those who contemplate the pleasures arising from a numerous and healthy off-spring, as well as by those who take a peculiar interest in throwing a light on the science of pathology and medicine, still too obscure, alas! for our necessities and sufferings! Upon my suggesting to Mrs. Cooper, that the origin of this disorder in her child might be antecedent to its birth, she desired to know if it would be thought necessary she should be put under any regimen or course of medicine, in hope of obviating the same misfortune hereafter (there was then a probability of an increase to her family). In my answer, I said I did not think it necessary to put her under a positive restraint, from the bare apprehension of what might never again occur.

In her second letter, the anxious and tender mother says:—

“I ALWAYS observe, when he (speaking of the infant) is worse than usual, that his water is very pale and clear, and as soon as he begins to amend, it assumes a very white appearance, with a great sediment in it, which, when poured off and dried, is direct palpable sand.”

Her third letter (of May 25) begins,

“I HAVE the happiness to inform you that my dear little boy is better. He has now regularly taken your Sol-

vent, as you have directed, for nine weeks; and I think it has been of great service to him. He has passed sand almost always in his water; and, about a fortnight since, for a few days, this sand was of a red appearance, the exact colour of brick," &c.

In a letter I was honoured with (dated June, of that year), after wishing to be supplied with a bottle or two of Solvent, Mrs. C. says, "My dear little boy is gradually mending, &c. &c.; so that I entertain a hope he may be an addition of one to the number of those who have been rescued from an untimely grave by a silent, slow, but certainly a ravaging, distemper."

The child, I have since heard, is become a fine youth.

C A S E XXV.

THE lady of Dr. Orton, a physician of eminence, near Southampton, in Hampshire, and sister to Admiral Sir R. King, Bart., hearing, through J. Anyatt, Esq., one of the Members of Parliament for that place, of the efficacy of the Solvent in disorders of stone and gravel, was induced to lay her case before the proprietor, for his opinion and direction. It cannot be expected, nor would it be proper, that he should particularize all the symptoms of Mrs. Orton's malady; suffice it to say, that they clearly evinced the existence of stone in the kidneys, which gave her so much torture as to render her incapable of standing upright, or of turning in bed, without exquisite pain. From unerring appearances, it was evident that the seat of the disease had suffered some erosion from the hardness of the stone; and there was room to apprehend a fatal excruciation. No time was lost in putting the lady under a course of the Solvent, which, in a few weeks, had so far operated upon the calculus, as not only to give her an assurance of the precise nature of the disorder, but also a well founded hope of a recovery from it. With varying the dose according to circumstances as they occurred, the disease, in other words the stone, diminished daily, so that, after about seven months, she only took, now and then, a dose of the medicine: and, before the expiration of a year, she had no complaint whatever remaining. Mrs. Orton continued in good health at her house in Hereford Street, near Hyde Park; and, in grateful remembrance of so signal a recovery, beyond the hope of her medical and other friends, she, at her own instance, condescended to make her case publicly known, expressing a readiness to communicate the particulars to any lady suffering under a similar disorder.

C A S E XXVI.

THE Reverend Michael Pembridge wrote, from Tixall, Staffordshire, the seat of the Honourable Thomas Clifford, Esq., as follows:—

To Mr. PERRY, Surgeon.

SIR,

I duly received the bottles of Solvent, and your favour in answer to mine. It seems you sent them by the *Chester Coach*, which does not pass Tixall nearer than four or five miles; but, fortunately, one of Mr. Clifford's servants, at that time, happened to be at the place where the coach stopped, and the driver inquired of him, if he knew the person to whom the box was addressed. Thank God, I continue to gain ease from the Solvent, and am almost free from any symptom that may be thought painful or troublesome. I take your medicine about an hour before going to bed, as I eat no supper nor take any drink besides the cup of water-gruel with which I swallow the Solvent. This medicine has not only been of very great service to me, but it has done also much in a short time. I have not those frequent urgencies to make water, which I had before I put myself under your care. I have recourse to the urinal now only twice or thrice in the course of the morning and afternoon, instead of almost every half hour. On the other side I send a draft, &c. I am, sir,

Your humble servant,

Tixall Hall, Staffordshire,
Aug. 14, 1798.

MICH. PEMBRIDGE.

In the early part of the following winter, Mr. Pembridge wrote the following few lines:—

SIR,

By the favour of a friend, I send this to acquaint you that I received the two bottles of Solvent safe. I thank God I continue to gain much relief by the medicine, and am in hopes I shall not have occasion to trouble you any more on my gravelly complaints. I trust my friend, to whom I have here recommended it, may be as strong a voucher as myself of its efficacy.

I remain, Sir,

With best wishes,

Your humble servant,

Bath, Nov. 8, 1798.

MICH. PEMBRIDGE.

This gentleman had no occasion for more of the medicine, but remained perfectly well at a considerable distance of time from the date of his last letter.

C A S E XXVII.

A MR. PERRY (no relation of the proprietor, nor even personally known to him), it is believed, a brewer, at Newport, in the Isle of Wight, was many years afflicted with the stone, of the existence of which in his bladder there never had been the least doubt, and for which soap, with a variety of other commonly reputed lithontriptics, had been taken. At last, it grew so troublesome as to incapacitate him from doing any business, when he luckily heard of a cure by the Solvent, in the case of an old person thought desperate. He was himself considerably advanced in years when he began to take it. In about ten weeks, the first lamina of the stone gave way, which, by diminishing its weight, took off the pressure from the neck of the bladder, and afforded him ease. In the course of a few months, lamina after lamina crumbled to pieces in the shape of broken shells, and, before the end of fifteen, the very *nucleus* itself (which, it is clear, first formed in one of the kidneys, and, descending into the bladder through an ureter, laid the foundation of the stone) came away in five pieces, and so entirely correspondent, that they may, in a moment, be put together as a perfect nucleus.

Though this my patient is a gentleman so much beyond the prime of life, the course of the Solvent occasioned him no trouble nor inconvenience; nor has the disease, now so happily removed, left any effect behind it to diminish the pleasure of his recovery. Of this, the following letter, from his grand-daughter, is an indubitable proof.

To Mr. PERRY, Surgeon.

SIR,

I HAVE made every inquiry possible to learn who the person was, who had been disappointed in obtaining the genuine bottles of Solvent (for there have been counterfeits of this, as 'tis feared there always will be of every medicine which has obtained celebrity). We should all have been happy; if we could have contributed to put the above gentleman into the same course my grandfather was so fortunate as to pursue; it would, no doubt, have been a satisfaction to you, and of infinite service to him. My grandfather, your patient as he was, is well in the particular complaint for which he consulted you, and better

in all respects than we could expect in a person of his years, he being nearly eighty-four. My family (though unknown to you) unite in compliments with, Sir,

Your obedient servant,

Newport, Dec. 18, 1799.

CATHERINE PERRY.

C A S E XXVIII.

From the same town, John Roberts, Esq. (who has experienced great benefit from the Solvent, in a complicated case of gout and stone, and to which he has recourse even to this day, when occasion requires), writes as follows:—

To S. PERRY, Esq., Surgeon.

SIR,

THERE is a respectable lady in this town, who suffered most severely from stone and gravel for fifteen years, so that her life was often despaired of; and her bad fits returned regularly every few months. No advice, nothing she took, relieved her, till, by taking your Solvent ten months, she was cured. During that time, she voided several stones, the largest three quarters of an inch long, and about the size of a small quill. She now thinks, that, during her complaint, she must have lost the greatest part of her left kidney, from *certain appearances* and observations made at the time, and by a hollow or vacancy she feels in that part ever since; and she regrets the not having acquainted you with her case and symptoms herself. She has, however, been well now for these three years, without any return whatever. I am, Sir,

Your sincere and obedient servant,

Newport, Isle of Wight,
Dec. 11, 1803.

JOHN ROBERTS.

C A S E XXIX.

JAMES SHIPDEN, Esq., Mayor of Deal, in Kent, hearing of the successful operation of the Solvent on his neighbour Sir Edward Knatchbull, Bart. (whose life had, to the great joy of his amiable family, been prolonged many years by it), consulted me on the case of his surviving son, having lost one under the ravages of this cruel disorder. The medicine was duly administered to him for nearly a year, and then a few doses now and

then, which so completely removed every symptom of the stone and gravel, that he omitted it wholly at about the age of twelve or thirteen, and was sent to school like other youths, where his rapid acquirements made ample amends for the time he had before lost, being afterwards distinguished, in all companies, for the brilliancy of his wit, and the polish of his intellect.

At the age of about twenty-one or two, however, to the inconsolable grief of a good, a tender, and affectionate parent, it was thought advisable to bring him up to town for advice, when I accompanied my much-beloved and admired young patient to Doctor Saunders, in Russell Square, who, as was but too well anticipated, pronounced his case to be consumption, and his parent accompanied him to Bristol hot wells. Temporary relief was all he gained there, for, in a few months after, this gentle, this innocent youth, was transferred to Heaven, where his pure and shining virtues so befitted him to be placed.

C A S E X X X.

The following Case of Mr. Wilson, a young gentleman of Dundee, will not be deemed uninteresting, as it shews the ill effect of an undue retention of the urine.

To S. PERRY, Esq., Surgeon.

" SIR,

" *London, 20th Aug. 1805.*

" It is now near two years since, by a sedentary life, too much study, and not allowing myself to make water when called by nature to do so, that I brought on myself indubitable symptoms of the gravel and stone, with great weariness, lassitude, pains in my shoulders and down my thighs. I was advised to have recourse to lime-water, and drank six pints a day for more than half a year. It increased the quantity of urine secreted, as was to be expected, but did not diminish the pain, or remove one symptom of the gravel. Since that, I heard of the efficacy of Adams's Solvent, in that part of Scotland where I reside; and I obtained a bottle from Mr. Chalmers of Dundee; but as I was about to set out on a voyage to London, I deferred commencing with your medicine, till I should inquire of you whether my manner of living is proper or not: it is as follows.—Milk or milk-porridge, or a cup of tea, for breakfast; for dinner, broth, roast or boiled beef, mutton, veal, or lamb; in the afternoon, tea; with little or no supper. My age is twenty-one; but, perhaps, I ought to mention, that, a long time previous to the date my disorder made itself known, I felt a

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pain in my left side, and, sometimes, in both sides, whenever I ran only a short distance."

Upon my informing Mr. Wilson that his manner of living was very compatible with the operation of the Solvent; and that it was highly probable, the disposition in the habit to form stone was anterior to the time he addicted himself to close study, though so doing might accelerate the progress of it; he began the use of the medicine, and, shortly after, wrote as follows:—

"SIR,

"Dundee, Oct. 6.

"I BEGAN a course of the Solvent soon after I consulted you in town, and already find myself better. Though every painful symptom is, in some degree, diminished, yet, on the days I took the whey, I felt an acute sensation, not to call it pain, at the root of the penis, with a variable little swelling on the left side near that part. Now, as I do not remember to have heard or read of any such appearances accompanying the stone or gravel, and no mention is made of it in your Disquisition, I thought it proper to communicate the occurrence to you," &c. &c.

As this unusual circumstance could not be accounted for, from the ordinary effect of the drinking of whey, other than as an *aperient* (for a purgative medicine of strength will occasion it), I deemed it proper to say little on the subject, other than recommending a gentle styptic application in case it might prove to be an incipient rupture. I had the satisfaction to find his next letter make no mention of the matter. It said:—

"DEAR SIR,

"Dundee, 16th Nov.

"I CONTINUE to receive benefit from your Solvent, and desire to have a supply of it sent to me at Mr. James Robertson's, Jun., Cowgate, Dundee, for which Captain Drummond is desired to pay you.

"I am, &c. &c."

Mr. Wilson's last letter is of the date following:

"To Mr. PERRY, Surgeon, &c.

"DEAR SIR,

"Dundee, 25th April, 1805.

"FOR some time I have omitted taking the Solvent, and confess that, had I been regular, I might have been entirely

freed from every part of my disorder. In excuse for myself, however, I must add, that when I took the last bottle, I was freed from all uneasiness, but my sensations tell me my confidence was premature. I have sometimes felt a dull obtuse pain in the right groin. I ought to inform you, that while I took the last bottle but one of your medicine, I passed, with the urine, a great deal of a fine slimy sand, which, when in the least agitated, formed clouds; and which, afterwards, fell to the bottom of the glass. If any of the symptoms of my disorder should remain after consuming the supply you now are to send me, you shall hear again from your obliged and restored humble servant,

“JAMES WILSON.”

Not hearing again from Mr. Wilson during some months, I concluded he had felt nothing more of the disorder; in this opinion I was happily confirmed by a gentleman of his neighbourhood, who came to consult me in the course of the next year.

C A S E XXXI.

The following is, perhaps, as interesting and extraordinary a Case as any the Author has met with in the whole Course of his Practice.

MR. COXE FEARY, of Bluntisham, near St. Ives, in the county of Cambridge, a gentleman of an independent fortune, remarkable for the natural vigour of his intellectual powers, as well as for the strength of his body, employed the early part of his life in agricultural and field exercises, and enjoyed a good state of health, without the smallest signs of his habit giving way to the formation of *calculi*. Now, as his striking case and recovery have been greatly noticed in the vicinity of Cambridge, and especially in his own neighbourhood, he will not, it is hoped, be offended if the Author touches on a circumstance that may be said more particularly to lay the foundation of the disorder which so very lately threatened, not merely in the eyes of his family about him, but also of the faculty who attended him, to deprive society of one of its best ornaments, i. e. *a good man*. Let it be understood, however, that Mr. Feary, of his own spontaneous will, sent the particulars of his singular recovery to the Author, desiring that it might be made known to the world for the benefit of the afflicted in a similar way; but he did not mention the circumstance alluded to (probably, not thinking it necessary or relative), though it more particularly

discloses the reason of an excellent constitution admitting the introduction, or rather the generation, of a disease (for the seeds of it, we know, are in every man), which renders strength of stamina an aggravation of one's sufferings, and occasions the natural activity of the mind to add to the regret it feels by the privations of the body.

During the accustomed exercises and sports in which Mr. F. freely shared, he had never observed the least indisposition in his water, or in any part of the urinary canal; but, some few years ago, his mind inclined him to the discussion of polemical subjects and religious opinions; and hence he was led to much reading and study.

From this application to books, and attention to the living opinions of distinguished men, as well in the established church as in the pulpits out of it, Mr. F. felt persuaded, that the word of God did not stand in need of those exterior ornaments which so many religious casuists have insisted upon: he, therefore, resolved to promulge or explain it in what he was pleased to think the easiest and simplest way, and thence, however singular it may seem, from motives truly christian, he is seen to preach and to teach the doctrines of the Gospel in his accustomed dress; and, as the Author has been informed, is often entreated by the heads of the most respectable families, and by considerably large congregations in the vicinity of his residence, to diffuse among them the means of obtaining that serenity of soul he is himself known to possess, and of practising that benevolence on which he founds the basis of all religion.

This digression, unauthorised by the patient, will not, to the reader, be thought irrelative, as it will shew how readily a strong and athletic frame may allow the urine to deposit its sabulous quality by a discontinuance of that motion or exercise to which it had before been accustomed; and which previously kept all the fluids of the body in so undulating a state, as left no time for the attraction of particle with particle, and thereby to occasion obstruction in the discerning organs.

It appears, then, that in a few months after Mr. Feary disused his horse and his gun, and applied himself to the desk, he observed sand to subside in his urinal. This appearance continued for a year or two, but, as he felt no uneasiness, he entertained no apprehensions concerning it. In the course of the year 1802, however, the passing of fine sand in his water discontinued, and he was not without some uneasiness for the consequence of the sudden change. He spoke of it to a medical gentleman in his own neighbourhood, who treated the matter very lightly; prescribing a dose or two of opening medicine, leaving it afterwards to itself. But Mr. F. continued to have his fears, for, as he had done nothing effectually to dislodge or destroy the insidious enemy, he suspected he would one day appear with renovated strength. This turned out to be exactly the

case: the concretion in the kidneys advanced with so much rapidity, that, in the year 1805, he was unable to ride on horseback, and if he walked fast, or farther than a reasonable distance, his water would be bloody. He applied to several eminent men of the faculty in his neighbourhood, from whose prescriptions he derived only a temporary ease; the main disease continued to increase, and its symptoms to be aggravated to a frightful degree; the sufferer scarcely bearing to be moved in his bed. In this hopeless condition his friends called in additional assistance, and the most distinguished practitioners, as well physicians as surgeons, in the counties of Huntingdon and Cambridge (whose names it would appear invidious to mention), exerted their usual skill in vain; leaving him and his afflicted family without the hope of his recovery. Although it did not appear by the symptoms that more than one kidney contained stone, yet both were so alike afflicted, either by the sympathy of the one for the anguish of the other, or by a kind of paralysis (for a spasm is hardly a term strong enough to express such an affection), that no urine passed, or was secreted from the blood during more than six days and nights! Mr. —, surgeon, of St. Ives, not believing it possible that a person could live under such a renal obstruction, expressed his wishes (and laudable they must be considered) that he might be allowed to introduce a catheter into the bladder, conceiving it must be distended with water. He was permitted to do so, but, to his great surprise, after he had, with professional dexterity, passed the instrument easily beyond the sphincter of the bladder, not a single drop of water followed. At this important juncture, as if by an interposition of Providence, *Perry's Disquisition of the Stone and Gravel* was shewn to him, and a bottle of Adams's Solvent was obtained, without loss of time, from the Misses Paul, of St. Ives, of which he took a dose as soon as it came, with readiness. Strange, but happy to tell, that, on taking the third dose, the kidneys began to recover their tone, and perform their office, and he was, as it were, suddenly translated from the region of the miserable to heaven!! He persisted in taking the full dose of the medicine during the course of two or three bottles, till he was sensible of the stone passing the ureter of that side where the excruciating pain had first been felt. In this state he left his cruel enemy no time to repose, for he even increased the dose of the medicine till the calculus dropped into the bladder, which happened while Dr. — was in his room, to whom, relying on the soundness and sensibility of the bladder, he said, "If you will stay with me a little while, Doctor, you shall see what has created all this trouble and danger." It turned out as he expected, for, with the first emission of water after the stone had dropped into the fund of the bladder, it came away with very

little difficulty through the urethra; and, from that moment, Mr. Feary has not experienced the least pain whatever.

The stone was of greater length than thickness, was narrower at one end, but much of the form of a kidney bean, which shape it had taken, as is always the case, from the bed or place of its formation.

The Author, in a visit to another patient in that part of the country, during the course of the autumn (1806), had the satisfaction of hearing the account his patient had before sent to him by letter, confirmed *visá vocé*. He was happy in congratulating Mr. F.'s amiable and interesting family on the continuance of his perfect health; but, at the same time, took the opportunity of advising him to use, now and then, a bottle of the Solvent, as a preservative from a renewal of those complaints to which he may be liable as long as he is disposed to a sedentary life.

C A S E XXXII.

The annexed letter is from William Dickinson, Esq., author of several valuable works, and, particularly, one on the Duties of the Inferior Magistracy (a gentleman highly accomplished, and as much esteemed in private life as he is qualified for a public one). It is the answer to an inquiry concerning the case of his father, the Rev. Doctor Rastal, then Chaplain to the Duke of Portland. (Mr. D. was allowed, by Act of Parliament, to change his name, in pursuance of the will of a relation.) Sir Robert Hamilton, Bart., as mentioned therein, was a General in His Majesty's service, and espoused the sister of Lady North, who had witnessed the beneficial effects of the medicine on her housekeeper. Sir Robert, although more than sixty-eight years of age when he was sounded for the stone by Mr. Pott, lived ten years after, free from pain, by "the taking of his enemy prisoner," as he used pleasantly and militarily to say; observing, that "to think it quite destroyed was expecting too much."

DEAR SIR,

Dec. 13th, 1814.

It is a long time since the occurrences took place, respecting which you inquire, but they are so strongly impressed on my memory, that, except precise dates, I can ac-

curately detail the whole. The substance of your inquiry, I think, is, "What led my late father to try the experiment of your Solvent, and what were its effects?" Several years ago, I believe more than twenty-five, but I cannot fix the precise time, being in company with the late Dr. Warren, who was my father's countryman and friend, I represented his hopeless state of suffering from the stone. He was afflicted to that extreme degree, as neither to bear the motion of the easiest carriage, nor even to sit with convenience in any thing but a chair of a peculiar construction. He refused, at the time of life at which he was arrived, to submit to any operation of the knife, and, having tried Mrs. Stevens's, and many other medicines, recommended by both regular and irregular practitioners, without any beneficial effect, he had nothing to expect but a speedy and miserable dissolution. Dr. Warren asked me, Whether, among the medicines he had taken, he had tried your Solvent? He said, he did not mention it as any thing secret or mysterious, for, that he knew its contents as well as the compounder; but, that it was a safe, easy, and compendious method of taking a powerful medicine; but recommended me, in the first instance, to purchase your book, and judge for myself. I did so, and selected two cases, out of the numbers you cite, viz., those of Lord George Germaine and Sir Robert Hamilton. To the first, I applied by letter; to the latter, in person. Their accounts were so extremely satisfactory, that I purchased a few bottles of your medicine, which my father took, and, before he had finished them, he could bear to sit in a common chair, and to travel in an easy carriage. He persevered, and, before he had taken a second supply, had voided as many small stones, and particles of stones, of all shapes and sorts, as would fill an half ounce phial. It was extremely clear that these were the angular excrescences of a large stone, which having become smooth by the action of your medicine, the irritation was gone, he felt comparative ease, and his health was much amended. About a year after, a day's journey, over some very rough road, occasioned some large particles of stone to be forced into the urethra. These he was under the necessity of having extracted, which was performed by a celebrated surgeon of Nottingham, Mr. Attenborough (near which town the occurrence took place). By a strict examination of the convex and concave sides of these laminae, so extracted, there was reason to believe they were portions of a stone, at least, the size of a turkey's egg. It is sufficient to add, that he persevered in taking your Solvent, at times, till the day of his death, which was nearly ten years after the event I have been just relating, and that, during that whole period, he was continually voiding particles of stone, without inconvenience; and, on the whole, enjoyed life as free from pain as if he had never been troubled with the complaint. I shall be very

glad if this testimonial answer the purpose of doing that justice to your medicine which it so well merits; and remain,

Dear Sir,

Very truly your's,

Lisson Grove, Paddington.

W. DICKINSON.

C A S E XXXIII.

MR. GOFF, Coal Merchant, of Scotland Yard, being convinced of having the gravel or a stone in the bladder, was easily persuaded to take the *Solvent*, which he did during twelve or more weeks. He grew easier, and, by the assistance of some aperient pills, which opened his body and promoted the secretion of urine, he flattered himself he should never be troubled on that score again. Calling upon him, however, about the middle of September, 1810, he seemed in considerable distress and pain, which he said were occasioned by a rough piece of calculus having passed the sphincter of the bladder, and lodged in the narrow part of the penis, where the *glans* is joined to the *corpora cavernosa*, and could not be forced out by the ordinary flow of urine.

Not being greatly alarmed at the occurrence, he had delayed to send to me, or to any other surgeon, for assistance, but had obtained a pair of forceps at a surgeon's instrument maker, with which he had repeatedly and unavailingly tried to extract the stone from the passage. I presently succeeded in getting hold of the stone, but it gave way, and only about a third part of it was withdrawn. Now, as the dilatation of the passage was attended with considerable uneasiness, from the length of time this little hard body had lain irritating it there, and as some blood accompanied the operation, I desisted from a further essay at this time, assuring my patient that the urine could not fail to be discharged, though not in a quite uninterrupted stream; but that, if he would take a few full doses of the *Solvent*, so as speedily to impregnate his urine with its quality, and, also, throw a little of it, moderately diluted, up the passage, I would answer with my life for his being soon freed from the cause of his present uneasiness. This advice he readily adopted, and, in three days, the remaining fragment of stone was evacuated, and himself so restored to ease, as to set out on a journey to the sea-side.

The next year I received the following Letter from Mr. Goff, dated Brighton :

"TO MR. PERRY.

"SIR,

"Brighton, July 12, '1811.

"I have remained free from my old complaint since I last saw you, till, a few days ago, I was a little reminded of it; but, as the old Proverb says, 'a stitch in time saves nine,' I wish you to send me a large bottle of Solvent by the coach, from the Golden Cross, Charing Cross, which I propose to take in the full dose, at all events.

"I am, Sir,

"Your humble servant, &c.

"J. GORR."

C A S E XXXIV.

The subjoined Letter is from a Gentleman of considerable Rank in Life, as well as high in the Army, residing in the North of England.

"SIR,

"Scarborough, 12th July, 1810.

"As I find, in the ninth edition of your Disquisition on the Stone and Gravel, that persons taking your Solvent have stated their cases to you, I hope you will excuse the liberty I have taken to consult you upon my own situation.

"For a year past I have had, very generally, an indescribable sensation at the end, or end, of my penis, after making water; but, am more uneasy after a stool, especially when costive. The general sensation is such as you have described, viz. a frequent desire of making water, but, during the time of making water, I have little or no pain whatever, and seldom much pain at the neck of the bladder. I now and then feel the tenesmus you speak of, but, after a costive stool, the heat and unpleasant sensation in *ano* are particularly troublesome. I have sometimes had a pain in my right side, at other times in the left, between the kidneys and bladder, and which has, more than once, occasioned a sickness. I should observe, that I am of a bilious habit. I have often examined my water, but only now and then did I observe any thing like gravel or sand, which was very small, of a brown colour, and shining. The particles were hard and angular, but only a very small quantity passed at a time. I have been taking your Solvent for more than five months, under the direction, or rather guidance, of an apothecary, who has an exalted opinion of it, and speaks respectfully of you. I can only say, at present, that I have been, in

a degree, relieved by the experiment hitherto. The apothecary is lately dead, or my case would have been stated more technically, but I have described, as methodically as I could, what I conceive to be the symptoms of my disorder, and will thank you for your opinion upon my case as soon as convenient. I have not taken the full dose, but only two tea spoonfuls at bed-time, and two in the morning, because it produced a degree of costiveness, so as to distress me on account of the piles, which I have been subject to for some years. Pray cannot you prepare it so as that it may be equally efficacious, but not so likely to produce a costiveness in the degree it has done?

"I remain, Sir,

"Your most obedient servant,

"THOMAS SMITH.

"P.S. It is in consequence of the recommendation of Mr: Lidderdale, of Eastwood, who, I find, has been cured of the stone by your Solvent, that I apply to you on this occasion."

, In about four months after the above, I received another letter from the Colonel, to the following purport:—

"SIR,

"*Milsom Street, Bath, Nov. 22, 1810.*

"You will be pleased to hear of the progress of your valuable remedy for the stone in relieving my complaint. In the month of September, I went over to Dublin, where I heard of the surprising cure you performed upon the father of Lady Crosby, I was therefore doubly encouraged to proceed in my course and regimen. I obtained a couple of bottles on College Green, but they could not both be genuine, as one was different in taste and colour from the other; I therefore took neither, but waited till the arrival of a fresh supply by the more satisfactory channel, as at first. I have parted with seven fragments of stone, and a great deal of a whitish sand, which, held in a clear light, appears in part to shine like glass. I have, for the last three weeks, felt so well, that I shall venture to join the army, on foreign service, when the next reinforcement leaves England. I propose to take a few bottles with me, and should there be occasion, you shall hear again from

"Your very humble servant,

"T. SMITH.

"P.S. I hear that a Mrs. Hamilton, of Laura Place, and who had been a patient of Dr. Parry, has been signally relieved by your Solvent."

C A S E XXXV.

MRS. RAMSAY (the lady of then Colonel Ramsay, now Major General Ramsay, commanding in the Northern District about Newcastle) wrote to me in the summer of 1808, that her son, a very fine youth about ten years of age, had been very ill and declining for some time, without its being ascertained what could be the cause. He had been, for some time, taken from school, in order the better to watch the symptoms and nature of the disorder. From his cries when he made water, and from the bloody tinge of it, after playing actively, the medical gentleman who attended the family, suggested the possibility, and even strong probability, of the existence of a stone in the bladder. In referring the case to me, I did not hesitate a moment to concur in the same opinion, and the young gentleman was immediately put under the rules and regimen I prescribed. In a few months I received the following letter from the tender and affectionate mother of this much-loved youth.

"SIR,

"Your little patient, my son, will soon be in want of some more of your medicine. Thank God, he suffers very little indeed, and grows and thrives charmingly. The *poor* little boy, in this neighbourhood, has also nearly exhausted the last bottle you were so good as to present him; his mother thinks she perceives an amendment in him, but as he has been so great a sufferer, and for so long a period, we cannot expect he will be materially better in so short a time. My sister, Mrs. Morison, has a small phial to send me, which I request you will have the goodness to pack with the medicine, and you will oblige, Sir,

"Your humble servant,

"*Canterbury, April 9th, 1810.*"

"ELIZA RAMSAY.

At the end of the year I was written to by Mrs. Ramsay, as follows:—

"SIR,

"*Canterbury, Dec. 11th, 1810.*

"I HAVE persevered in giving my little boy your Solvent medicine; and have, since he has taken the bottle I obtained last from you, procured another through the medium of Mr. Simmons, at the Library of this town; but it will be more satisfactory to me to have it from you, and also to state to you, that your young patient has had no return of his complaint, but the symptom of passing his water with some difficulty at times has occurred, though I flatter myself with less violence. Will

you have the goodness to send, by the Canterbury coach, as soon as convenient, a fresh supply, as he is at present without any? It is probable I may be in town before the winter is over, when I will make a point of conferring with you on the subject.

“ I remain, Sir,

“ Your humble servant,

“ ELIZA RAMSAY.

“ Mrs. Ramsay, Canterbury, will be a sufficient direction.

“ P.S. He has taken two tea-spoonfuls twice a-day: would it be advisable to increase the dose?”

Being anxious to know the condition of health of my young patient, I took the opportunity of inquiring after it, a few weeks ago, at the house of John Rennolds, Esq., Bloomsbury Square, intimate friends of the family; when I had the satisfaction to learn from Mrs. Rennolds of the General's promotion in rank and of the station of his command; but, above all, that my young patient had been well for the last few years, was grown a fine young gentleman, having fully recovered the time he had unavoidably lost in respect to his education by being taken from school. Mrs. Rennolds added, however, that some symptoms had lately occurred which indicated the possibility of, or a liability to, the return of the young gentleman's former ail; but which, no doubt, his anxious parents will guard against the danger of, by a timely recurrence to the remedy, on which so much reliance may, from experience, be safely had.

The following Cases are of that description which, although they cannot be denominated radical or perfect cures, are, nevertheless, of that nature which leaves the patients indifferent as to the disorder in prospective. These consider the enemy to their former repose, if not totally destroyed, as, at least, satisfactorily subdued, so as to be unlikely again to disturb the tranquil tenour of their lives. Patients of this description seem to feel like another old patient of the author's, who does not consider himself quite cured, and yet cares very little about the matter (Colonel J. White), who wrote to the author thus:—“ Send me, however, a case of three or four

bottles of your invaluable Solvent; for, though my formerly cruel enemy has consented to a truce with me, yet, should he presume to raise his head again, I will charge him, as before, with what I have found to be a sovereign ammunition, so that, at worst, it is but submitting to a small tax (as Mr. Pitt used to say) to save what is so valuable."

C A S E XXXVI.

It may be remarked in this place, that numbers of patients (particularly those advanced in life) have taken the Solvent till the stone has been reduced in size, and rendered so smooth on its surface, as to become indifferent about its total dissolution. The author has the satisfaction to say, that he never found one person so circumstanced obliged to undergo the operation.

"SIR,

"In answer to your kind inquiries, your patient is still living, thanks be to God. He was glad to hear from you, as he has reason to believe, that, under the blessing of Heaven, your Solvent was the means of lengthening his life many years. He cannot, however, consider himself effectually cured, as he now and then feels an uneasiness for twelve hours, and sometimes longer, in the course of a fortnight, three weeks, or a month. A medical gentleman, of this town, who often calls upon him, is of the opinion that the stone is smother, and, consequently, less irritating. We all agree that you may properly publish, in your new Edition of your Work, that my father is one of those patients to whom the Solvent has proved of the greatest use and benefit, by, at least, lessening the ravages of that disease, which, if left to itself, must long ago have destroyed him, though of an excellent constitution. When any of us come to London, we will call on you. I am Sir,

"Your's, very respectfully,

"*Swaffham, Norfolk,*
Jan. 7th, 1815."

"ROBERT GOODRICK, Jun.

C A S E XXXVII.

"DEAR SIR,

"*Dover, Jan. 4th, 1815.*

"In answer to your letter, received yesterday from Canterbury, give me leave to say, that I should have had much pleasure in a visit from you, if your jaunt could have been extended to Dover. In compliance with your request I can truly

say, that your Solvent, which I have taken occasionally for more than ten years, and which I still continue to take, at times, when I think necessary, has afforded me much relief in my complaint of stone and gravel, by expelling the calculous and gritty matter with which my constitution abounds, and thereby preventing its formation anew, or adding to the one which was formed many years since ; but which, nevertheless, I cannot flatter myself it has absolutely reduced. I am,

“ Dear Sir,

“ Your most obedient servant,

“ *S. Perry, Esq.*”

“ J. B. LANE.

Now, when it is considered that the foregoing two cases are those of gentlemen who have passed, perhaps, for some years, the grand climacteric of life, they must, as much as any other of whatever description, tend to comfort, console, and encourage the aged sufferer under this dreadful malady. There cannot be a doubt, but that the late Duke of Portland would have given thousands, nay, tens of thousands, to have availed himself of relief similar to the above ; and yet, of this, the Proprietor and Discoverer feels no hesitation in saying that it is next to impossible that any one, similarly circumstanced, should not derive so much relief, at least, from the Solvent.

It is on this ground, and from the observation made in the author's presence by an affectionate relative of the above-mentioned nobleman (who died by the operation), with respect to His Grace being persuaded to believe that medicine could do nothing for him ; it is, I would observe, for these reasons that it has been thought advisable to ask permission to publish a few such cases, though they certainly are not to be considered as absolute cures.

The Right Honourable Lord Dysart may be classed among the author's patients of the above description ; for, although his lordship has not favoured the author with the particulars of his case, and who has never, at any time, been consulted by the noble lord, yet there cannot be a doubt of that nobleman doing justice to the Solvent, so far as to acknowledge that his casually taking a few bottles (which he has done for some years past), has

restored him, in a confirmed case of stone in the bladder, to that ease which enables him to travel and to take every kind of exercise, like a person in perfect health, considering his advanced time of life.

One remark, of no small importance, may also very properly be made in this place, the fact which it contains being interesting, in an eminent degree, to a class of patients who are excluded by age, &c., from the chance of a more *speedy*, though more *serious* relief; I mean, that by the *knife*. It is what may be solemnly affirmed, viz., that scarcely ten instances have fallen under the knowledge of the proprietor among, perhaps, as many thousands of cases, where a reasonable trial has been made of the Solvent's power, that such patients have been obliged to undergo the operation. The medicine has hardly ever failed to reduce the stone to a diminished size, or a clayey smoothness of surface, so as to enable such person to bear with it ever afterwards, as an inconvenience, which, by comparison with their former sufferings, hardly deserved the name of disorder. This was the exact state of the late so much admired David Garrick, Esq., of the late gallant Lord Hawke, of Mrs. Douglas, sister of Sir Andrew Snape Hammond, Bart., and of hundreds of persons of less distinction, who, if necessary, might also be named. By what may be considered as a *reasonable trial* of the Solvent's efficacy, is meant from six to ten months.

It is not to be denied, however, that innumerable are the persons who have commenced a course of the Solvent, and, not being relieved in any sensible degree in a month or six weeks, have impatiently left it off, and precipitated the *stroke of the knife*, persuaded, no doubt, in that interim, to adopt the pretty general belief, that it is in vain to seek for any less desperate remedy!!

It remains now, as a sequel to this melancholy consideration, to state what might otherwise by some persons be thought withheld from some improper motive. It is the sequel of the history of Mr. Bell, formerly a surgeon of high repute at Wycombe, in Bucks. After his cure, as recited in a former part of this work, and remaining well for eight or ten years, his family was thrown into affliction by an unfortunate connection he made. He removed into Surry, was again seized with the old disorder;

he recurred to the Solvent, with what the proprietor considered favourable auguries. The proprietor, who admired his elegant manners and gentlemanly acquirements, saw him often, and, entertaining a very high regard for him, was sedulous in rendering him service in more than the malady of stone. Mr. B.'s mind became irascible to a degree, from what he termed the *res angustæ domi*, though he was in hourly expectation of the possession of a considerable estate, and which was soon after left him. Without, however, making family affairs a topic among those not concerned, they cut asunder our friendly intercourse and communications. Mr. Bell tried some other medicines; the stone, no doubt, accumulated; and, with equal probability, contributed to sour his temper still more. On my return from Ireland, about three years ago, to my astonishment, and I may add, great grief, I learnt that that accomplished patient, my once so much loved friend, had resolved (I fear not without too much of that passion in his resolve which had well nigh more than once overwhelmed his mind), I painfully learnt that he had, in my absence, determined to be cut. The operation was performed by one of the most eminent of the profession, but he died on the third day after it was performed.

C A S E XXXVIII.

Perhaps none of the Cures effected by the Solvent afford more pleasing hope or well-founded expectation in the unhappy sufferers under this malady, than the half-performed one described in the following extract of a letter from a medical gentleman at Aberdeen.

“ I HAVE, as I conceive the medicine's efficacy merits, done every thing in my power to put it on a good footing with the faculty here, and to bespeak their candour to try it in fair and clear cases of the stone. Dr. Livingstone, a physician, as eminent in the profession as esteemed in private life, adopted it in the case of a man of the name of Walker, in this town; he took the Solvent for some weeks, but his agony and his impatience were so great, that, contrary to all advice, he would undergo the operation. He was actually cut, when the stone to be extracted broke into several small pieces, which, with the greatest difficulty, were all taken out of the bladder. The pieces were all soft, like mortar, which put it past a doubt that,

had the patient persevered with the Solvent, his cure would have been happily performed, because, the first time Dr. Livingstone sounded him, the instrument wrung on the quite hard stone; whereas the last time the Doctor sounded him, he found the calculus quite soft."

C A S E XXXIX.

"No. 2, *Garlick Hill*, 10th Nov. 1814.

"SIR,

"I was afflicted with the gravel for upwards of ten years, and constantly suffering violent pain in my left side, during which time I voided a great quantity of red sandy gravel, accompanied with small stones, some full as large as a barley-corn.

"Hearing of your Solvent, I was determined to try it, and, after taking one of your large bottles, began to bring away large quantities of soft sand without the least pain whatever. After continuing taking the Solvent for eight months (at the same time attending strictly to the rules laid down), I am now, thank God, quite free from it; and, for the sake of those who labour under this cruel disorder, I beg you will state my case in any way you may think proper, and even refer any person to me for their satisfaction, in order to convince them of the value of your medicine. I have the honour to be,

"Sir,

"Your most obedient humble servant,

"S. Perry, Esq. Surgeon,
"Bloomsbury."

"CHARLES DERECOURT.

C A S E XL.

It has not been advanced in this work, that a cure of the stone by the Solvent exempts the patient from a future attack. It is only insisted upon, that correcting the calculous diathesis in the habit at the same time that the present disease is removed, gives such person solid grounds to hope immunity from a future attack, and, at least, from a very early one. Those persons who have been so assailed a second time, have scarcely ever felt the relapse in a less period than from seven to ten years; whereas, after the operation, the disorder has often returned, and exerted the same violence in its symptoms, in the course of a twelvemonth, or even less. Mr.

Astley Cooper has performed the operation twice on a gentleman within two years, and a third time the unhappy gentleman is suffering under the disorder. He is now making trial of the power of the Solvent.

ROBINSON LIDDERDALE, Esq., then of East Wood, near Greta Bridge, Yorkshire, was cured of a stone in the bladder, by the Solvent, in 1805, which happy recovery was acknowledged in a very handsome and feeling manner, by a long letter to the author, but which would be superfluously, if not uselessly, published now, as the following shorter one will shew.

“ To MR. PERRY, Surgeon, &c.

“ *Greta Hall, near Carlisle,*
3d Jan. 1812.

“ SIR,

“ HAVING changed my residence to this place, and being again seriously affected with symptoms of my old complaint, *the stone*, and well knowing the efficacy of your medicine in my former distress, I beg, on receipt, you will send me per Carlisle Mail Coach, directed as above, a guinea bottle, with any directions you may think proper, considering my advance in years since my late recovery. For this, and the bottle formerly sent to me for a friend, you will please give a receipt to Messrs. S. Barber and Sons, Cowper's Court, Cornhill, who will pay the same on shewing this letter.

“ I am, Sir,

“ Your most obedient servant,

“ R. LIDDERDALE.”

The author is happy in being able to say, that three bottles removed the incipient returning malady; which Mr. Lidderdale acknowledged in a letter, about six months after, conched in terms the most flattering to the character of the medicine.

C A S E XLI.

MR. BUDGEN, Banker, of Dartford, in Kent, was taken suddenly and severely ill, in the summer of 1803, so as to be utterly incapable of continuing to take any part of that exercise which his active mind and various concerns had always inclined him to. His pain was so considerable as to alarm his family

for his safety, and Mr. David James, his first clerk, thought it proper to write to me, requesting I would hasten down to see him; for, although there were no indicating symptoms of a gravelly nature, so as to induce the gentleman who had attended him to declare the case calculous, yet, as his father had been one of my patients (a successful one) in that disorder, strong suspicions were excited, that the son's partook of the same nature. I found a very considerable irritation at the neck of the bladder, and a frequent desire to make water; but, above all, I observed so large a proportion of a thick mucous and gruel-like sediment in it, as to feel much concern for the possible consequence of so new and singular an attack. I was persuaded of an erosion of some kind about the sphincter of the bladder, and, therefore, not being quite convinced of the existence of stone, I prescribed pretty large and repeated doses of the *bals. capivi* in almond emulsion, with three tea-spoonfuls of the Solvent, every eight hours. Nothing could produce a more speedy and fortunate effect than these medicines united; for, in less than three weeks, Mr. B. parted with a few thin flakes, of a gritty substance, resembling small scales of fish, and much fine sand. The water grew clear, and he resumed the use of his gig, or his horse, as formerly, going to Chatham, or coming to town, every few days.

Mr. Budgen has remained well of the gravel ever since; for, although he was, about a year ago, taken suddenly ill again, so as to call in Mr. Astley Cooper, Mr. Francis, of Beckenham, and myself, yet it was found that this new attack did not arise from calculus, but from a morbid affection of the prostate gland; from which, also, to the great happiness of his family and numerous friends, he perfectly recovered; and remains free from any indisposition, as the author agreeably witnessed within this last month, in a conversation with him.

Of the successful effect of uniting balsamics with the Solvent, where the disorder is attended by a purulent appearance of the water, the above is but one instance in many which have lately occurred. An amiable lady (a very near relative of Mr. Vallance, late of Stamford Hill, but now an eminent brewer of Sittingbourn, in Kent), whose condition was thought so critical as to deem it proper to call a consultation of Dr. Saunders and Mr. A. Cooper, at my own house; afforded another instance. It would not be proper to detail the case, but, the Solvent alone not effecting the desired relief, the *balsam capiv.* was super-

added, and the lady, to the unspeakable joy of her anxious and estimable family, quite recovered; and, as the author has reason to believe, remains well to this hour.

C A S E XLII.

SIMON HARCOURT, Esq., of Yardley Place, near Buntingford, Herts, from seeing the recovery of an acquaintance of his father-in-law, Lord Henniker, of Stratford; but, more particularly, by hearing from his mother, Lady Shuldharn, of the astonishing cure of Sir Richard King's sister; he was, though with some reluctance (having no opinion of an advertised medicine), persuaded to try the Solvent; but before he took it, he consulted me, when I found there had been much doubt entertained, by his medical friends, of the nature of his disorder, because his water had been oftentimes bloody, without exhibiting the slightest appearance of sand or any earthy matter whatever. He had lived much on the Continent, and had found that claret and all other French wines disagreed with him, and brought on what Doctor Leroy, of Paris, denominated a fit of *nephritis*. On his return to England, he found himself incapable of travelling from Southampton (near which place he then lived) to London, in the ordinary vehicles, without making it a journey of two days. Upon my expressing a pretty strong belief of the existence of a stone in the left kidney, and assuring Mr. H., that, were I mistaken in that point, the medicine would produce no ill effect on his general health or habit, he consented to make trial of it. He had not taken it six weeks ere two small bits of a calculus, almost as white as chalk, but rather resembling alum, were observed to have passed in a profuse making of water after a ride of ten miles on horseback. He now wanted no persuasion to persevere in the regimen of the Solvent, and, in less than six months, he voided as much gritty discharge as would fill a large tea-spoon.

“Yardley Place, 26th April, 1809.

“DEAR SIR,

“I wish you would be so good as to send me two bottles of Solvent, directed to me at this place; and please to direct them to be forwarded by the Stamford and Peterboro' coach, from the Bell and Crown, Holborn. I have the satisfaction to say, that I am a great deal better than when I had

the pleasure of seeing you last; continuing to discharge the same fragments. I remain,

“ Dear Sir,

“ Very truly your’s,

“ SIMON HARCOURT.

“ P.S. The direction is near Buntingford, Herts.”

In about four months, Mr. Harcourt wrote as follows :—

“ *Southend, August 18th, 1809.*

“ MY DEAR SIR,

“ I AM here for a short period, with my family, for the sake of bathing our children: and, having nearly exhausted my stock of Solvent, I wish you would be so good as to send me a guinea bottle of it, by the Southend coach, from the Bell and Crown, Holborn, directed for me at the Hope Hotel, Southend. I feel now, as if my kidneys were almost, if not quite, free. I remain,

“ Dear Sir,

“ Very truly your’s,

“ SIMON HARCOURT.”

Mr. Harcourt took two or three bottles more of the Solvent, which left him, as he expressed himself, “ better in health than he had been for fifteen or twenty years.”

C A S E XLIII.

MR. VALENTINE DUKE, a Surgeon in the Royal Navy, wrote to me the particulars of his case, about Christmas 1808, which he was convinced was that of a stone in the bladder. The symptoms of his malady were so distressing as to render him incapable of fulfilling the duties of his station; and his ship being in actual service, and expecting every day to be sent on a foreign station, he expressed his apprehension of being obliged to relinquish his profession. At all events, he wished to try the effect of the Solvent, and, accordingly, I sent him, in compliance with his order, a case of half a dozen bottles to Portsmouth. By the time he had taken three bottles, he wrote, that he felt considerably relieved, and expressed a confident hope of

obtaining a cure from it if he could remain at home; but that the ship was about to leave Europe for a very distant station. As he was unwilling to leave the service entirely, in the midst of the war, I applied, through a relation, to the considerate and generous Dr. Harness, stating the case of this young gentleman. Through the Doctor's interest, the Board removed him to an hospital ship, and this so much wished for, but yet unexpected, appointment, filled the measure of his hope. and he wrote to me gratefully and exultingly of his good fortune in meeting with a friend, whom, he was pleased to say, had "at once relieved his mind, restored his body, and bettered his estate."

From Sheerness, he wrote as follows:—

"Gorgon Hospital Ship, 11th April, 1809.

"MY DEAR SIR,

"SINCE the receipt of your much esteemed letter, apprising me of the success of your application in my favour, I have continued to mend, so that I hope my long existing and inveterate enemy will, ere long, be quite overcome. I am, however, so much better, that I propose to accept of an offer of going out, the ensuing season, in the fleet to the North, under Sir James Saumarez, as I have the honour to be known to that excellent Admiral; and, also, that Dr. Jamieson, appointed Physician of the Fleet, is my particular friend. With this view, I shall beg of you to send me a package of a dozen or more bottles, as you may think proper, and for which you will receive payment at the agents, as usual: but I request it may be without the deduction you make to professional men. The great service you have rendered me, not alone in my health, forbids my accepting your kind proposition."

Mr. Duke went out in the expedition to the Baltic, and for his medical aid to the Swedes, in the epidemic disease which broke out at that time, he received marks of distinction from their Court. He returned home in a condition so altered for the better, in fact, so nearly well, that he accepted a permanent and profitable appointment at the Cape of Good Hope; and, with a "bountiful supply" of the Solvent, he sailed to that African settlement, where, the proprietor learns, he remains in perfect health.

He says, in the postscript of his last letter:—"I have com-

municated to Admiral Douglas, commanding officer at Yarmouth, my surprising recovery from this dread of all diseases; and, as he has the same complaint, I expect he will apply to you on the occasion." He did so, but, as the first bottle made him costive, he discontinued its use.

C A S E XLIV.

The brother of the writer of the following letter called upon me about two years previous to the date of it, and represented Mr. William White to be in a most debilitated and deplorable state. His then condition left no doubt on my mind that it was calculous, and that only; for he had every pathognomonic sign of stone in the bladder. To go over the symptoms of it would be a repetition of what has been described already fifty times; the ease is selected only as a caution to patients not to be too hasty in leaving off a medicine, the *specific* effects of which they have experienced, as well as acknowledged to be easy to take, and inoffensive to the stomach. Mr. White, junior, represented the recovery of his brother as little less than miraculous; the subject to be regretted was, that my patient had not taken, at least, the bottles of Solvent which he had by him in the house, if only as a preventative, there being almost a certainty that they would have lengthened the interval of health, if not altogether have prevented a return of the disorder.

"SIR,

"Alphington, Feb. 6th, 1809.

"FROM about the 20th of December to the 4th of January last, I felt strong indications of a return of my old complaint, similar to that experienced before the voiding of the last stone, except that of coloured or bloody water. Not having taken the last two bottles of your Solvent sent me formerly, I proceeded now to begin with it; and, from the last-mentioned time (I took the first bottle in twenty-one days, the other is now about half way down), I have the pleasure to inform you that I am much better, and feel myself relieved (though not cured) from the sharp pains which I felt in the right kidney, back, bladder, &c. &c. I have not been so ill as to be confined or prevented from following my business, as in my former case; and, as I do not feel any bad effects from the medicine, I will continue to take four bottles more; have, therefore, to request you will be so good as to send it me immediately, otherwise it will not arrive in time to begin upon when what I have is finished, for it will be five days on the road. The first waggon

which arrives in town herefrom will bring back an order for the book-keeper, at the Bell Inn, to pay what your demand may be, I having deposited a sum in Mr. Russell's hands for that purpose, as this day. My constitution is good, therefore you need not be afraid to make the Solvent *potent*.

"I am, Sir,

"Your obedient and very humble servant,

"WILLIAM WHITE.

"Direct—Mr. White, Alphington, Exeter.

"P.S. Let the medicine be sent to the Bell Inn, Friday Street, to come by Russell's waggon, directed 'glass,' as it will be taken the more care of."

C A S E XLV.

"To Mr. PERRY, Surgeon.

"DEAR SIR,

"I FIND, after leaving off your Solvent for some months, those pricking pains in the kidneys, and the formation of small gravel, return, and I think, by my feelings, seem to accumulate, though I have taken several sorts of common diuretics, but can find nothing equal in effect to your Solvent. Inclosed is a 2*l*. note: you will please to send me two large bottles of your Solvent, by Taylor's waggon, Nag's Head Inn, Borough, on Tuesday, by twelve o'clock.

"I am, dear Sir,

"Your obedient humble servant,

"Horsham, Sussex,
April 25, 1813."

"WM. HARDS.

C A S E XLVI.

The following letter, received but a few days before concluding this work, is not published as a distinct evidence of the Solvent's efficacy, but as a striking instance of the effect of a measure which I had recommended in my former directions. It respects the patient's drinking *cheese-why* at certain dis-

tances of time during the regimen. This was advised upon the ground of one species of calculus becoming clayey, or, as it were, *waxy*, on its surface, by the power of the Solvent acting upon it; and, in that state, being shielded from the further operation of the medicine, till such adhesive matter be removed. Now, this whey is of a *saponaceous* nature, and does most certainly dislodge that surrounding *fatty* and *waxy* substance. Perhaps, no case ever more exemplified this fact, and its reasoning, than that of Mr. Collard (for that is the name of my new patient), as drawn up by a medical gentleman of great practice and first-rate abilities in his neighbourhood. It is as follows:—

“ TO MR. PERRY, &c.

“ SIR,

“ A GENTLEMAN of fortune and much respectability in this village, who has a stone in the bladder, began the use of your medicine about three months ago, and, at first, for a considerable time, with much advantage to him. It did not bring away any considerable portion of stone that was evident, but it took away pain and the irritable state of the bladder, which, before he used it, in a great measure prevented him from taking his customary exercise. He had been a very active man, and much accustomed to ride on horseback, before he had a stone, which that malady almost rendered him incapable of; such, however, was the good effect of your medicine, that, very soon after he began to take it, he resumed all his previous habits, and was constantly in the field at the head of his hunting party. When questioned respecting his complaint, his general answer was, he felt nothing the matter with him, and was barely conscious of the existence of the stone. About a month past, in compliance with your printed advice, he drank whey for a few mornings; and, since then, he has had a return of all his former symptoms. He is easy when in bed, and when perfectly still, but he cannot bear motion; and even the exertion of slowly walking produces much pain. In brief, he has all the customary symptoms of a rolling stone, which I need not occupy your time by describing. His urine occasionally, but not constantly, deposits the pink-coloured sediment, to which chemists have given the name of uric acid. His desire, in this communication to you, is to know—Whether he should continue your medicine, and in what dose?—Whether you can advise him to any change in the medicine?—Whether you can point out any peculiar mode of diet and regimen?—and, finally, whether you could form a better judgment of his case by a personal interview, as he would immediately call upon you in London.—He has great confidence in your medicine, and much advantage

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derived from its use has tempted this gentleman to make this application to you, and he wished me, as his friend, to be the means of making it, thinking I could detail the particulars of his case better than himself. An early notice on your part will be much esteemed. If you will have the goodness to inform me of your customary fee in this instance, it shall be immediately conveyed to you. I am, Sir,

“ Your most obedient servant,

“ *Minster in Thanet,*
“ *Jan. 20th, 1815.*”

“ R. FREEMAN,
Surgeon.

I am to observe, on the above, that I had an early interview with my patient, which, I trust, will produce much advantage. I have obtained a perfect knowledge of the nature of the stone in Mr. C—'s bladder, and have accommodated the Solvent accordingly. On this, much may be said; for although in a remedy published for general, and, with respect to the different natures of the human calculus, *indiscriminate* use; yet, that the diversity in the composition of these calculi makes it highly desirable that a knowledge could be gained of the nature of every one offered to the author for dissolution. The Solvent, as it is universally distributed, is expected to exert its happy and full influence on most of the various species of stones which afflict mankind; and, though there is reason to apprehend it is not taken in vain in the other species, yet theory, and I may add, practice too, points out how useful an alteration, or rather addition, may be made to it in those, when they are ascertained. To gain a perfect knowledge of the nature and quality of the calculus while in the bladder, is, in some degree, a *desideratum* at present, but there is much reason to hope it will not always remain so. The urine of the patient is the only guide to direct our opinion thereon; and that is certainly more to be relied on than a formerly evacuated piece of calculus, since the habit has been known to be under the influence of a lithic concretion at one period of life, and an uric concrement at another. The urine, at least, evinces the disposition of the habit at the time it is made, and shews whether it tends to the accumulation of a lithic or an uric stone. Now, the change which urine undergoes by conveyance and agitation, pre-

vents that satisfactory conclusion which otherwise might be come to, from an examination into it when *fresh* made. Persons in a certain or better condition of life are very unwilling to be the subjects of experiment, however harmless in their nature, or however beneficial they may prove to society.

It has, therefore, more than once struck the imagination of the author, that a house might be established, sufficiently capacious to hold a number of persons in indigent circumstances, proved, by sounding, to have the stone, and on whose urine chemical experiments might be made, from time to time, so as to ascertain under what description of stone that with which they were afflicted ought to be classed. The Solvent here recommended, or, indeed, any still more efficacious, which should happily be discovered, might then appropriately be compounded, or modified, to each description or class of patients. The regimen, too, under such an institution, might be regulated in the most exact and auspicious manner, so as to favour the looked-for effect of the remedy administered. Among the few gentlemen to whom this idea or crude sketch has been communicated, one has been pleased to offer considerable assistance toward carrying it into effect; and a second has freely proposed to add what he denominates his mite, for the same purpose. If the accomplishing it had not been found to exceed the author's means, it would not have remained so long only to be wished for.

CONCLUSION.



IT would be unnecessarily swelling this treatise to cite more cases of the Solvent's successful operation; the symptoms of the stone in the kidneys, as well as of the stone in the bladder, being but little varied in different persons afflicted with the same disorder. The chief design of the work itself was to counteract that gloomy despair in the sufferer which has arisen from a belief that the disease is irremovable but by the *operation*, and, in consequence, has driven many to submit to the knife who might have found a more safe cure, and, it may certainly be said, a much greater chance of a *radical* cure, by a less hazardous remedy. Sufficient evidence has here been offered, that such an opinion has been too hastily formed, and too fatally prevalent.

After so many unequivocal proofs, then, of the efficacy of this medicine in dissolving confirmed stones; of the numerous other instances which it has not been thought requisite to publish, being of persons in inferior conditions of life (to a part of whom the relief has been afforded gratis)—but, above all, the thousands whose cases are never likely to reach the author's knowledge, but must be known

to a certain extent in the neighbourhoods of the patients : altogether render it unnecessary further to dilate on its power : with regard, however, to its innocency, it may not be irrelevant to say, that so far is it from debilitating the stomach and viscera, that, in many instances, it proves a stomachic, correcting acidities in the *primæ viæ*, and thereby recovering a lost appetite. People in the most advanced periods of life, in remembrance of their former sufferings, take it, at times, as a beverage, considering it as a shield against a return of the disorder ; the tax on their pocket being an object undeserving the consideration of those who are but in the least degree easy in their circumstances. On this subject the author has further to observe, that he continues to receive those poor sufferers, who may be recommended by the faculty, with sentiments due to their helpless condition ; and, further, that with those gentlemen of the profession, who are so candid and so liberal as to adopt from the hands of another that remedy which they may otherwise not possess, he shall make it a rule generally, as he has, in particular instances, to supply them with the Solvent on such terms as will be worth their while to administer it in draughts to patients under their own peculiar care. It could be mentioned, where, in several great towns, a surgeon, or an apothecary, has gained reputation by having adopted such an expedient. For such success, the

proprietor does not the less cordially congratulate the party because his name is left out of the question; on the contrary, he holds such as deserving esteem for disdaining to cherish that narrow-mindedness which but too often attaches to the disciples of that profession, which, in every other view of it, is entitled to be denominated *liberal*.

After so full an exemplification of the happy and even wonderful effects of this newly discovered Solvent, it may be asked, whether it is assumed to be infallible? To this question, the answer must be in the negative.

That there are many cases so confirmed by duration, and other circumstances, as to preclude all hope of a perfect cure by the Solvent, the author is ready to admit. It would be a criminal partiality or prepossession to do otherwise. Nay, there have been, and may again occur, cases where he has not only consented to, but suggested, the expediency if not necessity of the patients undergoing the operation. This has happened, however, only when on the one hand a calculus of the most dense nature and unfavourable quality was known to exist in the bladder; and, on the other, when a suitable time of life, excellent constitution and habit, have all conspired to lessen the hazard of submitting to the knife; and, more especially, where the Solvent has been tried a reasonable time without producing its wonted good effect, or brought about those

prognostications which might justify the proprietor in urging the further continuance in a course of the medicine. Such cases may often happen where a young man, possessing no patrimonial estate, but enjoying a civil or other appointment, of which he would be inevitably deprived if unable to fulfil its duties. Under such circumstances it is justifiable to put life itself on some hazard, rather than to exist under the menaces of poverty and privation. Another kind of case which involved the expediency or propriety of the operation, happened, about two years ago, to a Mr. Arbouine, in York Place, New Road, whose sufferings were so intolerable, that no favourable opinion of my medicine (exalted as it is by my own experience and the judgment of others), much less by any bias towards my own interest, could withhold me from consenting to (I believe from suggesting) the operation, and Mr. Astley Cooper as a proper gentleman for the performance of it. The event was most surprising, and what had never before fallen under my view or that of that skilful surgeon, often as he has been called upon to exercise the bistory in the same way. *Thirty-seven stones*, of different magnitudes, were extracted; four of the number were broken by the forceps in extracting. The whole, together, might be considered as sufficient to make two large handfuls, nearly all of which Mr. Arbouine has carefully preserved. Mr. Cooper never

fails to cite this marvellous case in the course of his lectures.

Mr. Briggs (surgeon), near Connaught Place, lately favoured me with the sight of a calculus of the dark mulberry-like kind, which he had recently cut from a patient, of a most uncommon figure, of frightful density, sufficiently so as to admit of a high polishing, and evidently made up of a congeries or conglomeration of smaller stones of the same nature. I have since been further obliged by Mr. Briggs sending me an exact model of the original, which, from its curiosity, I should have been induced to have given an engraved representation of, had it not arrived too late for this edition. My most sanguine expectations of the superior properties of the Solvent could not allow me to rely on its dissolving, in any reasonable time, a similar stone of the magnitude (between four and five inches in circumference) and of the hard texture of this in question.

A word or two upon the subject of preventing the return of the disorder, by now and then taking a bottle of Solvent, cannot be unseasonable. That process of cure which is accompanied by a correction of the calculous diathesis, is indisputably and obviously more likely to prevent the recurrence of the disease than *the operation* by the knife; which leaves the disposition and the habit of the patient the same as before. It is not, however, denied, but

that in a distance of time, as five or ten years, that predisposition, or calculous diathesis, may, and does sometimes, return. Captain Snowe, of Bandon, while a lieutenant in garrison at Portsmouth twenty years ago, was completely cured of the stone in the bladder by the Solvent, but, eight years after, he was again attacked with the same malady, and was a second time relieved by the Solvent.

It is common, in persons of certain habits of life, to labour under a complication of gout with the stone. This was the case with Lord Sackville, Sir John Call, &c. &c.; so it is with several persons now under a course of the Solvent; and, in a very striking degree, with a worthy and intelligent gentleman, Mr. Bates, of Wycombe Marsh, in Bucks, whose urine throws out so uncommon a deposit of lithat of ammonia, both in quantity and nature, as has been scarcely ever witnessed. The urinal exhibits a party-coloured incrustation, resembling *Moko-stone*. In conjunction with, and under the approbation of, Mr. Slater, an eminent surgeon of Wycombe, trial is making of a course of regimen not usually adopted, but from which favourable expectations are entertained, although this gentleman has not been able to quit his room for the last ten weeks, and, during that period, has suffered the most excruciating pain. No intemperance of any kind has lent its aid to the

complicated causes of this gentleman's sufferings.

To such patients, gouty and calculous at the same time, it may be remarked, however, with great satisfaction, that as the causes of the two diseases to a certain extent bear considerable analogy, so the Solvent, though confessedly designed for relieving the latter only, has been found (certainly unlooked for), and unexpected in the first instance, to abate, in a surprising degree, the former.

The next and last point remaining to be considered, interests the reader, or, rather my patient, in no small degree. It is with respect to the possibility and danger of the suffering patient having a *spurious* Solvent obtruded upon him as the *genuine*; the evils of which are manifold, for not only is the afflicted party defrauded of his money, and the proprietor of the remuneration he is entitled to; but the time consumed in the trial of the counterfeit (precious it is in every sense of the word) is, perhaps, irretrievably lost, since the disorder, during the period of such fruitless experiment, is augmented, and the patient driven by a kind of *dernier resort* to the *history*!! This has happened many and many times to my own knowledge, accompanied by the most agonising regrets and griefs—the confession and expression of which irresistibly impel me to arrest the reader's attention to a slight sketch

of my own history, though in no other way connected with this subject.

It has been the fate of numerous persons, as well as that of the Author, to neglect the profession they are supposed qualified to succeed in, and to pursue some other less auspicious to their interest—to abandon the path of fortune, and lose themselves in the wilds of adversity—in the words of Shakespeare, to “leave the mountain and batten on the moor.” This was the case with him whose pen is now transiently sketching this faint picture of his chequered life. The reader, he trusts, will give him credit when he solemnly protests that not a particle of vanity obtrudes itself into this narrative.—On the contrary, his heart is painfully distended while he retraces its details, as, thereby, the images and sufferings of his sympathising and condoling friends, on his account, are brought again to his sad recollection. The shorter the time, therefore, so occupied, the better.

I had but just taken under my own care and distribution the Solvent (of which I declare myself to be the *sole inventor*), when the web of my future tissued fate was laid in the loom. Previously to that period, I had resided as a surgeon in Charterhouse Square, in the neighbourhood of which lived the late excellent and learned man, Mr. Lane, apothecary. A patient, who knew us both, severally applied to each by turn, to relieve him under the tortures of the stone. I hap-

pened to be most successful in that instance : Mr. Lane had, however, effected many cures by a qualified lixivium, which he prescribed and recommended for many years of his life. The case, though of a poor man, was singularly striking, as he had been sounded by Mr. Warner, surgeon of St. Thomas's Hospital, in the presence of the late Dr. George Fordyce, in order to be cut, but wanted resolution to endure the operation when brought to the test. The poor sufferer was supplied with the Solvent gratis ; and, as he was at the point of despair, from the general belief that there was no medicine discovered at that time which could be relied on as a cure, he resolutely took more at a dose than I had ever given, or could have proposed to give ; observing at the same time, that he would not impute any blame to me if it should hurt his general health. To be brief, he was, in seven months, cured of the stone, and was again sounded in the presence of Dr. Warren and Dr. Fordyce, when no stone could be found. The man resumed and pursued his labour as a bricklayer, and the particulars were, by his own desire and the approbation of Dr. Warren, attested before the Lord Mayor, as described in the earliest publication on this subject ; and then, for the first time, the Solvent was advertised, and the late Mr. Adams, my relation and fellow pupil, was appointed, with a considerable profit, to sell it under his name. At this time I entered,

as a surgeon, in the East Middlesex Regiment, where, becoming senior lieutenant as well as surgeon, the offer was made me from the War-Office to raise a volunteer company, which I did; resigning the surgeoncy to my assistant, Mr. Saunders. At the end of the war (Mr. Adams being dead), I settled in Argyll Street, when, by the frequent and friendly intercourse of Colonel Tuffnel, the representative for Beverley, I became impregnated with politics. I will not, however, exclaim, with a certain renegade,

“ Oh nunc renovare dolorem;”

since the circumstance brought me acquainted with some men of the best hearts, and most enlightened minds, that ever adorned society. The change wrought on me by the arguments of Colonel T., who execrated the policy of the American war, was conclusive, though he still thought it a duty to defend our common country from the common foe.—The change was no less than from proselytism to a prison. Becoming a member of the “SOCIETY FOR CONSTITUTIONAL INFORMATION,” I was introduced to those luminaries of reform, Mr. Paine and Mr. Horne Tooke. Between such *comets* what body could preserve its ordinary temperature? Suffice it to say, that I set up a newspaper to propagate those sentiments which, to me, appeared calculated to exalt and secure the fortune of the country, and increase the security and happiness of its in-

habitants. The prosecutions against the *Argus*, by the then Attorney-General, Sir Archibald Macdonald, could not extinguish its manifold eyes without destroying it altogether, which had cost more than five thousand pounds to establish. New prosecutions being instituted against me as soon as my first and second imprisonment in the King's Bench had been endured, and a heavy fine paid, I was advised to withdraw to a neighbouring kingdom, when (*mirabile dictu*) proceedings to outlawry were instituted against me; under which dreadful sentence I might have languished till this day, probably, but for the fortunate death of the late Lord Kenyon, who appeared to have harboured the most inhuman and rancorous malice against me. I was therefore immured within the walls of Newgate, where I remained (who would, who could, have believed it possible?) seven years and four months!!! It may naturally enough be asked, What was the heinous political offence which had drawn down so severe a visitation of the government upon me? I feel constrained to answer the question, having gone so far into my history already; and the inquirer or reader will be surprised to learn, that it was nothing more than what the Law Officer of the Crown, in his declaration, charged as "an insinuation that *the House of Commons was not composed of the BONA FIDE representatives of the people!!*" This marvellous, this incredible fact, may be

ascertained, by any inquirer, at the *Crown Office*, at any time. The proceedings are on record, and may one day be revised, when the nation shall be disposed to distinguish between *sedition* and endeavouring at *reformation*.

Prosecution to outlawry may be effected against any absent person, if he fails to appear to the writ called *utlegatum*: and to this writ it was utterly impossible I could appear, being, at the time, shut up in one of the strongest prisons in Paris, by force of the decree of the French National Convention issued against the English, as well as against the subjects of every nation at war with France. It was, therefore, of no avail that I pleaded "*a force majeure*" (according to our own law institutes), which withheld me from obeying the summons: every time the court was moved, the answer was, that "the reasons offered for the reversal of the outlawry are not sufficient;" and, of course, I was remanded back to my dungeon; where, as I have before observed, I was likely to remain as long as the then Chief Justice should live. I must not, however, omit to make grateful mention of Mr. Erskine, now Lord Erskine, for his disinterested zeal in my behalf. I wish I could say as much of my attorney. The maxim, "*de mortuis nil nisi bonum*," restrains me from saying more than that a tyrannical or corrupt government can always obtain tools, or purchase treachery,

to assist in its vindictive work. Of the laws of the country, and the ordinary and customary administration of them, I have no objection to make; but, as they are employed in *political* cases, the accused is not fairly nor constitutionally dealt by; and this will be the case while Judges look to the Crown for promotion and peerages in reward for their obsequiousness to the views of the Court, or, which is the same thing, to its Ministers.

But to return to what alone concerns the reader (though 'tis hoped the digression or episode will not have been thought impertinent). Under this bereft condition, no wonder that my medicine was counterfeited every where. It was known that I had not even the legal power to punish those who trespassed on my property, and wounded my medical reputation, by their substituted trash.

One of the evils of a long and cruel war, is its tendency to degrade and vitiate the morals of the people who countenance and sustain it. Such an influence has unquestionably deteriorated the fair character of the English merchant and trader; and to this cause chiefly may be ascribed the baseness of a vender of medicines with whom I had unfortunately entered into an engagement, attempting to induce me to instruct him in the counterfeiting a celebrated medicine, which he was then employed to sell for its author! What hands were these for myself

to have fallen into? But of this, perhaps, more in another place. The high reputation for probity of the person whose name as a vender is now inserted in the advertisements and directions, will be a guarantee against any apprehension of dishonesty or sordidness in that quarter.

In some of the former editions of this work, the names of many persons who vended the Solvent in the country were mentioned. This convenience was not unattended with the evils which have been complained of, for some of the persons presumed upon the confidence thereby given them, and distributed spurious Solvents. This, more particularly, was the case in Bath and Bristol, where, during a few years, not one half of what was sold in those towns was genuine. It has, therefore, been thought sufficient to observe, that one person of credit in most towns in England is appointed to sell it, and as these agents have a proper allowance made them, they are on no account entitled to receive more for it than is marked on the direction accompanying each bottle.

The last observation the author has to make before he lays down his pen (and he hopes he shall never have to make it again), is, that from the same unhappy causes which in common with the whole kingdom he has to deplore, viz. sanguinary wars and consequent excessive taxation, an artful trickery, instead of upright dealing, has found

its way into many of the commercial channels of the nation; and which, if not corrected, will tend to destroy that good faith and mutual trust which British merchants and tradesmen have been accustomed to repose in each other. Since the author has adopted a new apparatus for discovering the nature of the calculus of the consulting patient, he has, to his surprise, vexation, and indignation, discovered that, more than once, he has been imposed upon with respect to the purity of one of the chief (and most costly) ingredients in the composition of the Solvent. He is not, however, enabled to say that the person from whose hands he purchased it is the actual falsifier; it will, however, be his inquiry, and, in the mean time, this notice, he trusts, will contribute to prevent the like fraud in future.

To obviate the trouble which many patients would otherwise be disposed to take in inquiring whether they may drink soda water (a beverage now pretty generally adopted) during a course of the Solvent; the author, by anticipation, answers, that it is quite compatible with the medicine; and, especially, that the qualities of the soda water, as prepared at Mr. Johnston's, in Greek Street, Soho, are peculiarly congenial with it in all respects.

FINIS.



